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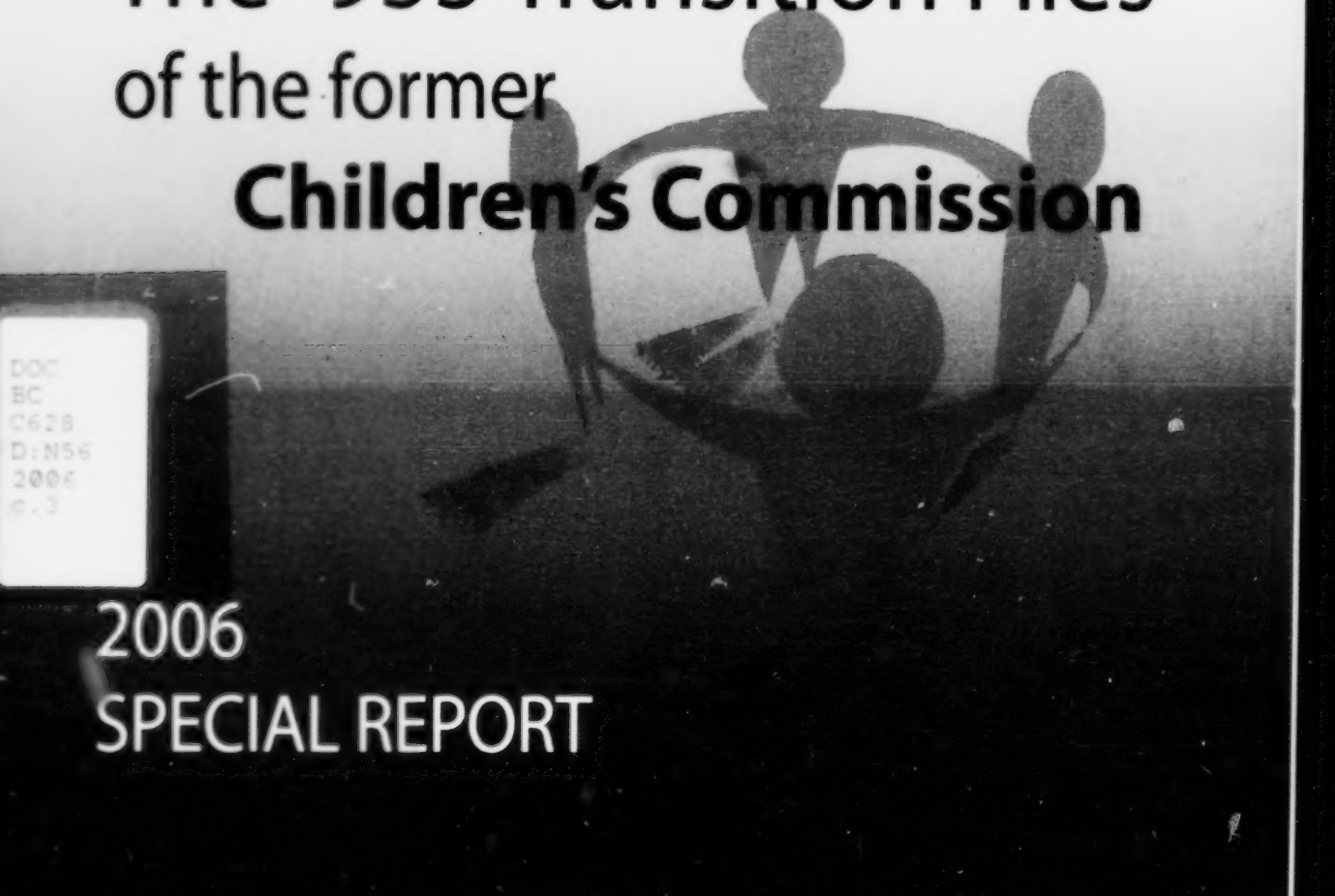
The "955 Transition Files" of the former **Children's Commission**



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2006 SPECIAL REPORT

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SPECIAL REPORT
2006

The "955 Transition Files" of the Former Children's Commission

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Message from the Chief Coroner

The central focus of this review has been to meet the commitment that all of the files alleged to have been "forgotten" during the closing of the Children's Commission would be reviewed. That objective has been achieved.

This report contains a factual summary of the information gleaned from that review and will provide important critical information to support ongoing efforts to prevent child deaths. The report contains recommendations intended not only to aid in the ongoing efforts to prevent child deaths, but to focus attention on areas of concern so that professional expertise in subject-specific areas can be utilized in these efforts.

A great deal of factual data is reported here. A great deal of work remains to be done with respect to future comprehensive evaluation of data to aid in prevention initiatives; not only within the B.C. Coroners Service Child Death Review Unit resources, but also in cooperation with a wide range of other groups and agencies.

The data presented here is limited to child deaths that occurred over the years of the Children's Commission's tenure that were not concluded before the Commission closed, or they occurred as the Commission was ceasing operation. The extent of meaningful evaluation is partly limited for a variety of reasons that are discussed at length in the report.

World wide experience with aggregate reviews underscores the exceptional value to be achieved through this process. While we believe that significant value has already been achieved through the steps taken to this point, it should be noted, that the BCCS CDR Unit continues to work toward improved future aggregate reviews, in-depth evaluations, and the collegial efforts with the Representative for Children and Youth and others.

Terry Smith
Chief Coroner of British Columbia

Executive Summary

This report summarizes the review completed by the B. C. Coroners Service (BCCS) Child Death Review (CDR) Unit of 955 child death cases that were reported to exist as either files pending an investigation (539) or as electronic files with name, date of birth and date of death only (416) within the Children's Commission (Commission) at the time that agency was disbanded in September 2002. These files will be referred to as the "transition files".

Key findings from the Review of the "Transition Files"

- There were 951 child death files, not 955, as there were duplicate files for four children.
- 215 cases had already received secondary reviews by the BCCS CDR Unit in 2003 and reported as part of that aggregate summary in the 2005 Annual Report[1] and are not reviewed in this report — summary in Appendix 1.
- This report presents aggregate statistics of the secondary review of the remaining 736 cases in order to complete secondary reviews of all Commission files reportedly 'forgotten'.
- Of the 736 cases, the leading classification of death is Natural-Expected deaths at 36%, followed by 32% Accidental deaths.
- The majority of Accidental deaths were vehicular accidents involving youth and teenagers, while drowning was the second leading cause of Accidental death for B.C. children.
- The BCCS investigated 455 of the 736 cases at the time the death occurred, concluding 455 cases with a Judgment of Inquiry[2].
- In 67 Judgements of Inquiry, there were recommendations made by the investigating Coroner to request action in prevention efforts.
- 265 of the 736 deaths were Natural-Expected deaths in which the child was under the care of a physician for a diagnosed medical condition.
- 16 deaths were Non-Coroner cases.[3]
- There was a disproportionately high number of youth and teenagers who died in motor vehicle accidents in the Interior region.
- Almost 70% of child deaths reviewed were of infants aged one year and younger and teenagers over 15 years.
- Natural-Expected death was the leading classification of death in infants, while Accidental death was the leading classification of death of teenagers.
- The data on SIDS deaths is not representative of today's infant death statistics. Since 2002, the general pediatric community diagnosis of SIDS requires specific anatomical post mortem findings.
- 39 out of 41 SUDI cases in this report occurred while the infants were left to sleep.
- Aboriginal children were overrepresented in most categories.
- 196 of the 736 children had received services from the Ministry of Children and Family Development (MCFD). Most of these children were receiving Community Living Services (CLS) and not child protection services.

[1] BCCS Child Death Review Report 2005. Appendix 4.
[2] See glossary for definition.
[3] See glossary for definition.
[4] 38 of the 951 (or .04%)

- 24 (.03%) of the 736 children were in the care of the MCFD at the time of their death[1].
  - 13 (.02%) of the 24 children in the care of the MCFD died suddenly and unexpectedly[2].
  - 11 (.015%) of the 24 children died Natural-Expected deaths from previously diagnosed natural disease processes.
- The MCFD conducted 12 Director's Case Reviews and 60 Deputy Director's Reviews following the deaths of the 220 children that had received services from the MCFD or were in the care of the MCFD.
  - The MCFD reviews indicated the need for increased intra-agency compliance with policy and procedures.
- When the Commission closed in 2002, 41% of 1,319 investigations were not completed.
- The Commission records show that they reviewed 2,147 cases and publicly reported on 769 of those cases during their tenure.
  - During this same time period, the BCCS investigated 1,735 deaths with Judgements of Inquiry or Verdicts at Inquest for 1,431 cases[2].

This report is in three parts which are briefly summarized below.

Part I:

- An introduction and explanation of this report as well as the data and its limitations.
- A summary of the child death investigation process, a description of the aggregate review and of the secondary review process.
- A brief historical introduction of child death review in BC beginning with the Gove Inquiry in 1995, and ending with the BC Child and Youth Review conducted by Mr. Ted Hughes, QC released in April 2006.

Part II:

- A detailed and factual reporting of an aggregate review with summary evaluations for each classification of death.
- Statistical summary of children who received services from or who were in the care the MCFD.

Part III:

- A selection of recommendations made by BC Coroners in 67 of the 736 deaths reviewed from 1996 to 2003; to provide examples of to whom recommendations are directed and the responses received.
- Recommendations made by the CDR Unit based on the findings of this report.
- Conclusion

[1] Five Undetermined, four Suicide, two Natural Unexpected, and two Homicide deaths. None were Accidental deaths.
[2] 17 Verdicts at Inquest, 1414 Judgements of Inquiry and 304 Non-Coroner Cases. See glossary for definitions.

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Part I

1| Introduction

2| The Secondary Review Process

3| History of Child Death Review in British Columbia

1| Introduction

During the transfer of some functions of the Children's Commission to the Child and Youth Officer (CYO), a committee of agencies met to discuss and plan the transition. Part of those discussions involved the management of the existing Children's Commission files. A collective decision was made that the BCCS would review child deaths from 2003 onward and not any existing Commission files for three reasons: the BCCS was conducting parallel investigations; some of deaths had occurred as long ago as 10 years; this was the advice received from former senior staff of the Commission and a variety of individual agencies. In March 2003, 466 Commission files were sent to off site storage while 73 files were inadvertently left in the CYO office.

After the Commission closed and until March 2003, the CYO continued recording child death data in the Commission's database, the Case Information Tracking and Reporting (CITAR) system. The CYO did not review any of these cases.

Four hundred and sixteen electronic data-only records of child deaths were created in CITAR during that time. These electronic files were included in the present review:

- 217 of the 416 records were deaths investigated by a coroner
- 199 of the 416 records were Natural-Expected deaths.

The BCCS examined the possibility of taking over and utilizing CITAR, however, this database did not meet all the Coroners Service present and future requirements, although access to this database was possible.

In December 2005, the Information and Privacy Branch of the Ministry of Attorney General and the Ministry of Public Safety and Solicitor General identified, retrieved, and inventoried all cases on CITAR and files not closed by the Children's Commission. Hard copy paper files totalled 539, while electronic files in CITAR totalled 416, totalling 955 files. In January 2006, the B.C. Coroners Service received instructions from the Solicitor General to commence a formal secondary review of the 955 files.

The Commission publicly released reports on the child deaths it reviewed. When the Commission closed, 12 reports were left by the former Commissioner with the CYO with instruction that the reports should not be released, pursuant to Sec.15(c) of the Office for Children and Youth Act which states:

> "...if an investigation under the Children's Commission Act into a child's death has been completed but the report of the Commissioner has not been released, the report must be delivered to the Child and Youth Officer, who may make the report public."

When the CYO staff reviewed these 12 cases in early 2006, four cases were found to be incomplete and therefore not closed and eight were found to be completed and closed with final reports on file. In August 2006, Jane Morley, the current CYO, reviewed these final reports to determine if they could now be released. Her decision was to uphold the former Commissioner's findings. The 12 child deaths for which these reports were not released are reviewed in this report.

Upon initial examination of the 955 files by the CDR Unit, it was determined that the actual number of child deaths was 951 as four cases had duplicate entries. The CDR Unit also

determined that 215 out of the 951 cases were previously reviewed and reported in the recently released CDR Report (2005). These 215 cases are briefly summarized in Appendix 1. The remaining 736 reviewed deaths are in this report.

A team of Coroners from across B.C. were selected to join staff at the Office of the Chief Coroner to assist in the secondary review of the Children's Commission files. This team of 11 Coroners reviewed all material in every file; manually collected a standard data set for analysis from every file, and identified any cases needing further follow up to gather additional information in order to complete the reviews. The corresponding 455 Coroner files that existed were also reviewed, in order to capture consistent and comprehensive data, and to review cases where minimum data existed in CITAR.

The files had been classified by the Commission as Natural-Unexpected, Natural-Expected, Accidental, Suicide, Homicide, or Undetermined. However, 32 cases which the Commission classified as Natural-Expected deaths were found to be mistakenly classified, and were in fact, Accidents, Suicides, Natural-Unexpected deaths and Homicides according to the Coroner's investigation. All of the mistakenly-classified cases had received a complete Coroner investigation following the child's death and the correct classification was confirmed through this secondary review process; with one exception. This one case required referral to a Coroner for investigation.

Two hundred sixty-five of the 736 cases reviewed in this report were Natural-Expected deaths. Natural-Expected deaths are not required to be reported to the Coroner as per Section 9 of the B.C. Coroners Act, as these children would have been under the care of a physician or medical team when they died. The most responsible physician would have verified the cause of death in these cases. In order to complete a review of these Natural-Expected deaths (265), the B.C. Vital Statistics Agency (VS) assisted this secondary review process by searching for, locating, and providing the necessary information and documentation to the CDR Unit. Each of the 265 cases was reviewed using the Commission data whenever possible, the VS documentation, BCCS Non-Coroner Case files, and additional medical records.

In the review of the 736 transition files, the BCCS Child Death Review Unit and community Coroners spent many weeks recording data, followed by the research and an aggregate review tabulation and evaluation in order to complete this report. At the conclusion of this secondary review, the team of reviewers formed several recommendations that are intended to allow the CDR Unit to move forward with its work, to promote action in reducing identified risk factors in the lives of children, and to further research efforts in order to compile empirical data to support changes in the safety, health and quality of life for the children of British Columbia.

Limitations of this report

As in any analysis of a large amount of data there are limitations to the statistical analysis, and the same is true in this report.

Firstly, the statistics that follow are a description of child deaths that occurred between 1996 and 2003 that did not receive a review by the Children's Commission, or for which an investigation had been initiated but not completed by the Children's Commission. Therefore, the statistical summary that follows does not necessarily reflect all the child deaths that the Children's Commission reviewed or all

the child deaths that occurred between 1996 and 2003. Similarly, as these deaths occurred as long ago as ten years, the reviewed deaths should not be considered a reflection of trends and patterns that are seen today in British Columbia.

For example, out of the total of 378 children who died in B.C. in 2001, 200 child deaths (53%) were reviewed for this report. Therefore, the data from the deaths reviewed for that year represent half of all the child deaths that occurred during that year. Data from those deaths may not be fully representative of deaths occurring today due to changing risk factors, or identification of new risk factors resulting from improved investigations.

The BCCS Child Death Review Report (2005) is a more accurate reflection of current child death trends in British Columbia. For the above reasons, for this report the CDR Unit did not develop specific recommendations limited to the data of the files reviewed, but rather general recommendations regarding the child deaths reviewed in this report as they relate to present trends.

Secondly, the sudden and unexpected deaths of children reviewed in this report occurred prior to the formation of the CDR Unit at the BCCS. Some variability was identified in the Coroner cases reviewed which further limits the current data set. While these deaths received an investigation by the BCCS, current practices have resulted in greatly improved child death investigation and increased data collection for improved analysis. The CDR Unit is continually working to improve child death investigation and will utilize the present report to further improve their work.

Thirdly, it is recognized that the number of Aboriginal child deaths presented in this report is an underestimate of the actual number of Aboriginal child deaths. For this report and all previous and future reporting by the BCCS, Aboriginal status was ascertained from the B.C. Vital Statistics Agency registration of death, and may not reflect all children who identify as Aboriginal[1].

Therefore, while it is tempting to make conclusions regarding causes and factors contributing to child deaths based on the data presented in this report, caution is warranted in consideration of the above issues. Similarly, understanding death trends requires thorough research beyond the scope of this report and is at risk of being oversimplified by the present limited data set. Nevertheless, in some circumstances it may be valuable to comment on the findings presented in order to aid in the understanding of the results presented in this review.

Finally, while there are some limitations to this statistical description of child deaths, it is important to note that this data will become an important part of the growing information from which the CDR Unit at the BCCS will be able to develop evidence-based recommendations and improved protocols for investigation of child deaths. This data will also undoubtedly be valuable to other organizations and agencies in development of their own programs and policies in the continued work of prevention of future child deaths.

[1] The use of the term Aboriginal in this report includes all First Nation, Indian and Metis preferred designations.

2| The Secondary Review Process

For every sudden and unexpected death of a child in B.C., the British Columbia Coroners Service conducts an investigation. Following a complete investigation by the Coroner, a report called a Judgement of Inquiry (JOI) states the facts and events leading to the death of the child, as well as any contributing factors to the death. The investigation also determines who, how, when and where a death occurred. If an inquest is held into the death of a child, a Verdict at Inquest (VI) is the report that reflects the facts obtained during sworn testimony and the jury's findings. Both reports form part of the public record and are available by request.

Once a case is concluded with a JOI or VI by the investigating Coroner, the case file then undergoes a secondary review by the Child Death Review Unit. During secondary review, data on over 100 variables or factors are tabulated for each death, referred to as aggregate review.

An advantage of this type of review process is that common underlying factors contributing to child deaths overall can be identified, and prevention efforts targeted to these factors to best prevent future deaths, rather than targeting individual circumstances. For these reasons, child death review teams all over North America, Europe and Australia have been publishing annual reports based on aggregate reviews. For examples of aggregate review based CDR reports see the website of the National Center on Child Fatality Review (ican-ncfr.org).

Some of the variables analyzed in this data consist of information obtained to help the BCCS better investigate child deaths. Other variables, such as those included in this report are important to help the BCCS meet its mandate of preventing future deaths and will guide other agencies and organizations in policy development.

This report presents an aggregate review of the 736 transition files.

3| A Brief History of Child Death Review in British Columbia

A. Judge Thomas J Gove Inquiry

In 1995, Judge Thomas J Gove was appointed to inquire into, report on, and make recommendations regarding the adequacy of services, policies, and practices of the Ministry of Social Services (MSS) in the area of child protection. This followed an inquiry and report by the Superintendent of Family and Child Services following the death of a B.C. child. In his report, Judge Gove described how a new child welfare system should be developed[1]. It was recommended that the Province establish an office of an independent Children's Commissioner.

Regarding child deaths, three of the recommendations were as follows:

1) "The Children's Commissioner should be given responsibility for receiving reports of deaths and serious injuries of all children and youth who are in the care of the province or who are receiving child welfare services".

2) "The Children's Commissioner should monitor adoption of recommendations contained in a death or serious injury review report, and should comment publicly if the child welfare system does not respond adequately to a death or serious injury review".

3) "The provincial ministry responsible for child welfare must ensure that findings from death and injury reviews lead to improved service delivery, and that patterns and trends identified from reviews and other epidemiological sources lead to reforms in provincial practice standards, qualifications, training and service design."

The office of the Children's Commission was established and started operations in September 1996.

B. The Children's Commission

There were four key functions of the Children's Commission that included addressing individual complaints regarding the MSS; monitoring services provided to children and families in B.C.; reviewing child fatalities and critical injuries, and advocating for systemic change.

Regarding review of child fatalities, the Children's Commission Act allowed the Commission to obtain data and investigate a death if the Commissioner determined there was a need to assess the adequacy of services to the child or for public health and policy. The Children's Commission also had the authority to make recommendations for the benefit and safety of other children. The act also allowed the Commission to report its findings and recommendations on the death of a child to parents and guardians and other relevant agencies. The Children's Commission was required to report annually, or in special reports, on its findings and recommendations regarding reviewed fatalities.

The Commission was inaugurated in September 1996 and closed in September 2002. After operations were underway, the Commission expanded its mandate to review all child deaths and injuries in B.C. and not only children in the care of the Province or receiving child welfare services. The Commission stopped opening new files on January 19, 2002. It continued work on existing cases and recorded new child death cases on

[1] Report of the Gove Inquiry into Child Protection in British Columbia (www.qp.gov.bc.ca/gove/govevol2.htm)

CITAR until September 2002, recording 244 cases. Following the Commission's close, the Child and Youth Officer (CYO) continued to record child deaths on CITAR until March 21, 2003, recording 172 cases. The 172 cases in addition to the 244 the Commission recorded total the 416 child death cases that the Commission neither reviewed nor investigated.

In six years of operation the Commission recorded 2,563 child deaths in B.C. The Commissioner ordered 1,319 investigations out of the 2,563 deaths, indicating that the Commission investigated 51% of all child deaths in the years of operation. Out of the 1,319 investigations, 539 (41%) files were still open or pending an investigation when they closed, and spanned the years of operation with cases from 1996 to 2002. The Commission had, therefore, completed 59% of its investigations.

The Commission developed a Multidisciplinary Team (MDT) to review individual cases. The team met four times a year for two days each time and consisted of the same agency representation each time. The team included senior officials and experts in child care, policing, children's medical services, social work, public health and suicide prevention, as well as representatives from the Aboriginal community and the Coroners Service.

The role of the team was to provide advice regarding findings and recommendations and consultation on the investigations. It was up to the Commissioner to decide whether or not to utilize the advice from the team. The investigators whose reports were being discussed would attend the meeting, provide a case summary, and respond to questions from the team. No MDT information is available or present in the files reviewed for this report. Any individual cases that went through this process could not be identified from the material available.

Another function of the Commission was the investigation of critical incidents and injuries involving children. The Commission's 2001/02 Annual Report states that 142 critical injuries of children and youth in care were investigated. The CDR Unit received a report that, from previous Commission annual reports, 33 cases were left open at the time the Commission closed. These child injury cases were not reviewed for this report.

Jane Morley, QC

The Liberal Government, after its election in 2001, appointed Jane Morley, QC to review the Children's Commission and other related agencies as part of the new Government's Core Services Review[7]. In December 2001, she released a report of her assessment. In this report she reviewed the functions of the Children's Commission, the Child, Youth and Family Advocate, the Ministry of Children and Family Development and the Coroners Service. Her mandate was to identify duplicated functions between these agencies and to make recommendations to address them.

Regarding the function and review of child fatalities she found that both the Children's Commission and the Coroners Office investigated the deaths of all children who die unexpectedly. However, while there was a detailed investigation conducted by a Coroner resulting in the public reporting by way of Judgement of Inquiry, there was no formal secondary review completed by the BCCS.

[7] Report on the Core Services Review of the Children's Commission and Overlapping Services Provided by the Child, Youth and Family Advocate, the Ombudsman, the Coroner and Ministry of Children and Family Development (2001)

Recommendations regarding secondary child death review were submitted to the Attorney General and the MCFD. Ms. Morley recommended the transfer of the Multidisciplinary Team within the Children's Commission to the BCCS with the addition of a representative from each of the MCFD and the College of Physicians and Surgeons and a Children's Officer. Deaths of children in care or receiving services from the MCFD should, she concluded, continue to be reviewed by the existing and effective MCFD Director's reviews.

Importantly, Ms. Morley recognized and recommended that legislative amendments were needed to allow the Coroners Service to take on this responsibility. At the time of writing this report these legislative amendments have still to be made.

Following recommendations made by Ms. Morley, the function of secondary child death review was transferred to the BCCS. The Children's Commission ceased operation in 2002, while the Child Death Review Unit at the BCCS commenced work in January 2003, using a review model in line with other established CDR teams.

Ms. Morley is currently the Child and Youth Officer of British Columbia and was appointed to the post in 2003. Her authority comes from the provincial Office for Children and Youth Act, Section 6 and at the request of the Attorney General, the Child and Youth Officer investigates matters within the scope of the act.

The office is independent and not part of any ministry providing services for children and youth, and the officer has a legislated mandate to comment publicly on issues affecting children and youth without interference from any ministry or from the premier and cabinet.

The Child and Youth Officer for British Columbia has the mandate to support children, youth and families to access relevant government services, to observe independently those services, and to advise government about how to improve them.

C. Ted Hughes, QC

In December 2005, Mr. Ted Hughes, QC was commissioned by the Government to review the child protection system in B.C, including the review of child death cases referred to as the 'forgotten children' or the 'transition files'. While Mr. Hughes was preparing his report[1], the CDR Unit at the BCCS began its review of the Children's Commission outstanding transition files at the direction of the Solicitor General, the Honourable John Les.

Mr. Hughes submitted his report to the Minister of Children and Family Development and the public in April 2006. The report contained 62 recommendations regarding the child welfare system in British Columbia. There were 22 recommendations regarding child death review, with three recommendations specific to the function of child death review at the BCCS.

1) The Coroner's child death investigation function, with funding as reflected in the Budget 2006 be continued.

2) The Child Death Review Unit within the Coroners Service continue.

3) The Coroners Act should be updated in line with the Coroner's role today; and expectations of the office should be clarified.

[1] BC Children and Youth Review, April 2006

Of the remaining 59 recommendations, one key recommendation suggested the appointment of a new officer known as the Representative for Children and Youth (RCY). Unlike the current CYO, it was recommended that this position be an independent officer of the Legislative Assembly reporting to a Legislative Standing Committee, and that they remain in office for a five-year term. Mr. Hughes, recommended that "with the advice of a multidisciplinary team", this new officer should review the information found and published in the review of the Commission files regarding children who were in care or who had received service from MCFD. Furthermore, Mr. Hughes recommended that a report be produced with recommendations and suggestions to improve service delivery that could prevent future deaths.

In addressing the transition from the Child and Youth Officer to the new RCY, Mr. Hughes recommended that a transition team be appointed in order to prevent a repeat of events leading to his inquiry and the present report.

Another key recommendation in his report addressed the need for developing and establishing linked data sets within child care ministries and between child care agencies in order to improve information sharing and communication between child protection ministries and agencies.

Part II

4| Introduction to Aggregate Review

5| All Classifications of Death

6| Accident

7| Homicide

8| Suicide

9| Natural

10| Undetermined

11| Sudden Unexpected Deaths in Infancy

12| Non-Coroner Cases and Natural-Expected Deaths

13| Children Who Had Received Services From or Were in the Care Of MCFD

4| Introduction to Aggregate Review

Terms used in this report

In this report, data from the reviewed child deaths are presented by the recognised Coroner's findings and classifications of death. A classification (or manner) of death is determined for each death by the investigating Coroner at the completion of the investigation or by the review manager in the cases not reported to a Coroner. The five classifications of death are Accident, Homicide, Suicide, Natural-Unexpected and Undetermined and are defined below.

Accident: Death due to unintentional or unexpected injury. It includes death resulting from complications reasonably attributed to the accident.

Homicide: Death due to injury intentionally inflicted by the action of another person. Homicide is a neutral term that does not imply fault or blame.

Natural (Natural-Unexpected): A sudden and unexpected death primarily resulting from a disease of the body and not resulting secondarily from injuries or abnormal environmental factors.

Suicide: Death resulting from self-inflicted injury, with intent to cause death.

Undetermined: Death which, because of insufficient evidence or inability to otherwise determine, cannot reasonably be classified as Natural, Accidental, Suicide or Homicide.

The above classifications of death refer to sudden and unexpected deaths, while the classifications below refer to Natural-Expected deaths.

Natural-Expected: An expected death primarily resulting from a disease of the body and not resulting secondarily from injuries or abnormal environmental factors.

Non-Coroner Case (NCC): Cases reported to the Coroner that, after an initial investigation, are determined to be Natural deaths consistent with the medical history and circumstances. These cases do not meet the criteria for death reporting outlined in Section 9 of the B.C. Coroners Act.

In addition, for this report, children were classified by their age at the time of death as described below[1]:

Neonate: birth to 28 days old.

Infant: 29 days to 365 days old.

Youth: 366 days to 14 years old.

Teenager: 15 to 18 years old.

Region of death is classified as one of five of the BCCS regions (see Appendix 2 for a map of the BCCS regions) as described below:

Fraser Region: Burnaby to the Coquihalla Highway Toll Booth, east to Manning Park and north to Jackass Mountain bordering Merritt.

Interior Region: Includes the region north to 100 Mile House and Blue River, east to the Alberta border, south to the USA border and west to the Manning Park gate, including Ashcroft, Lytton and Lillooet.

Island Region: Includes all of Vancouver Island, the Gulf Islands and Powell River.

[1] Developmental stages as defined by various agencies and organizations and other child death review teams (e.g., World Health Organization, Statistics Canada, BC Vital Stats).

Northern Region: Includes the region north, east and west from 100 Mile House to all provincial borders, and the Queen Charlotte Islands.

Vancouver Metro Region: Includes Sunshine Coast, Sea to Sky Corridor, North Shore, Vancouver, UBC, Delta and Richmond.

Many children receive services through the Community Living B.C. program (formerly Community Living Services) and do not require child protection services.

For example, children with medical conditions may require Community Living Services such as special needs daycare, nursing support services and specialized respite care.

Further terms used in this report include "children who had received services from the Ministry of Children and Family Development (MCFD)" or "children who were in the care of the MCFD".

"Children who were in the care of the MCFD" refers to those children in the physical care or custody of the Director under the Child, Family and Community Service Act at the time of death only.

"Children who had received services" refers to those children who were administered services under the Child, Family and Community Services Act within the 12 months preceding their death. Children who had received services from the MCFD, does not include children who were in care at the time of their death. Services provided may have included a child[1]:

- who was the subject of a child protection report and whose need for protection was investigated;
- who received medical benefits through the At-Home program;
- who was provided with a brief youth service, such as a food voucher and repatriation home;
- who was placed by court order with a person other than a parent, under the MCFD Director's supervision by request;
- who was formerly in the care of the MCFD either by agreement or court order and returned home;
- whose family received support services, for example, from homemakers, child care workers or family counselling providers.

Provincial child mortality rates

Despite an average of 225 child deaths reported to the BCCS each year since 1996, B.C. had one of the lowest infant mortality rates in Canada in 2003 (4.2 deaths per 1,000 live births), while the overall rate for Canada was 5.3 deaths per 1,000 live births[2].

The figures that follow illustrate the child mortality rate for Natural-Expected/ Unexpected deaths (Figure 1) and sudden and unexpected deaths (Figure 2) by provincial Health Authority. The province of B.C. Health Authority delineation approximates that of the B.C. Coroners Service regional delineation. For example, the region served by the Vancouver Coastal Health Authority corresponds to the BCCS Vancouver Metro region. The child mortality rates are based on the total number of children who died in the province during the Children's Commission tenure and during the transition period, in part providing a pictorial representation of the cases that were transferred to the BCCS for review.

[1] Information provided by the Ministry of Children and Family Development.
[2] Statistics Canada, CANSIM, Table 102-0504.

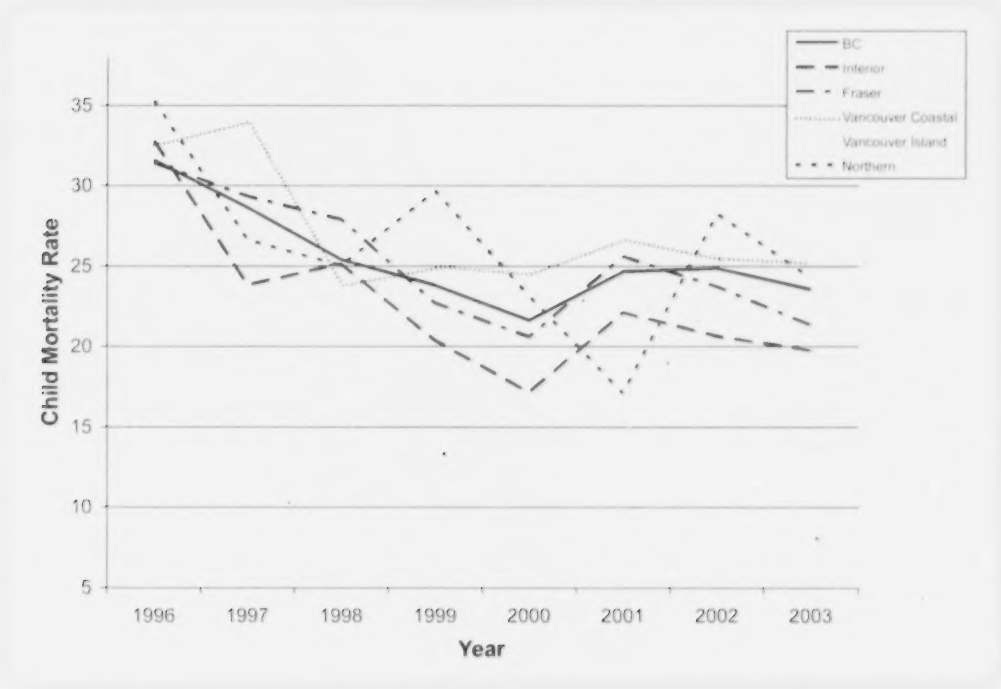

Figure 1 — Child mortality rate for Natural-Expected and Natural-Unexpected deaths between 1996 and 2003 for each health authority in BC and the provincial average. Child mortality rate is defined as the number of child deaths per 100,000 child population.[1]

Figure 1 illustrates the child mortality rate (0 to 19 years) for Natural-Expected and Natural-Unexpected child deaths for each Health Authority in B.C. Between 1996 and 2003 the child mortality rate for Natural deaths showed an overall decreasing trend. The overall trend toward a decrease in Natural-Expected and Natural-Unexpected deaths in B.C. may be a reflection of improved health care and/or general advances in medicine. The largest decrease in infant mortality was observed for the Interior Health Authority with a small increase observed for the Vancouver Island Health Authority. In comparison, mortality rates for sudden unexpected deaths (Figure 2) other than Natural (i.e., Homicide, Accident, Suicide and Undetermined) show much greater variability between years and Health Authorities. The Northern Health Authority showed the greatest variability, with mortality rates ranging from 13.9 (2001) to 34.5 (1997) deaths per 100,000 child population. While a decreasing trend was not observed for sudden and unexpected deaths, the initial rate of these

[1] Population estimates provided by BC Stats, Ministry of Labour and Citizen's Services. Child mortality data provided by BC Vital Statistics, Ministry of Health.

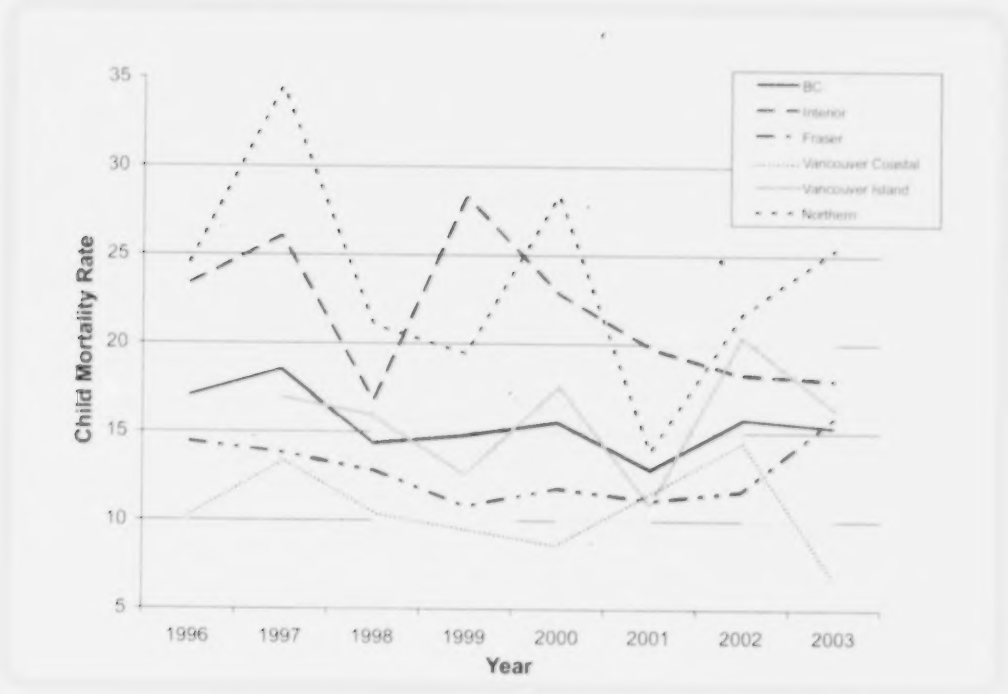

Figure 2 — Child mortality rate for sudden and unexpected deaths between 1996 and 2003 for each health authority in BC and the provincial average. Accident, Homicide, Suicide and Undetermined deaths are included (Natural-Unexpected deaths are illustrated in Figure 1). Child mortality rate is defined as the number of child deaths per 100,000 child population.

deaths was much lower than for Natural-Expected and Natural-Unexpected deaths. For example, in 2003, the sudden and unexpected mortality rate for the Vancouver Coastal Health Authority was 6.8 child deaths per 100,000, while the Natural-Expected/Unexpected mortality rate for this same Health Authority was 25.3 deaths per 100,000.

[1] Population estimates provided by BC Stats, Ministry of Labour and Citizen's Services. Child mortality data provided by BC Vital Statistics, Ministry of Health.

Child deaths reviewed in this report

The names of 955 children were provided to the CDR Unit of the BCCS as a list of child deaths that had not received a secondary review. Upon review of this list, the CDR Unit determined that the list contained the names of 951 children, not 955, as four children had been listed twice under different permutations of their names. Of this list of 951 cases, the CDR Unit identified 215 that had received a secondary review by the CDR Unit. These 215 deaths were reported in the CDR Unit's recent report[1] and are briefly summarized in Appendix 1 of this report. The remaining 736 cases are discussed in the present report. These 736 cases represent; 1) deaths for which an investigation was started but not completed by the Children's Commission before this agency closed or 2) a death that occurred as or after the Children's Commission was ceasing operation and was not reviewed or investigated by the Commission (Figure 3).

Figure 3 illustrates the number of deaths that were reviewed and/or investigated by the Children's Commission. The Commission ceased opening new files on January 19, 2002. It continued investigating existing cases and recorded new child death cases on CITAR until September 2002, recording 244 entries during this transition period. Of 1,319 investigations that were initiated by the Children's Commission, 539 had not been completed at the time the Commission closed. The Child and Youth Officer (CYO) continued to collect basic data on child deaths on CITAR until March 21, 2003, recording 172 entries during this transition period. The 244 child death cases from the Children's Commission and the 172 cases recorded by the Child and Youth Officer total 416 deaths entered in CITAR. These 416 cases, in addition to aforementioned 539 deaths total the 955 death cases that the BCCS reviewed.

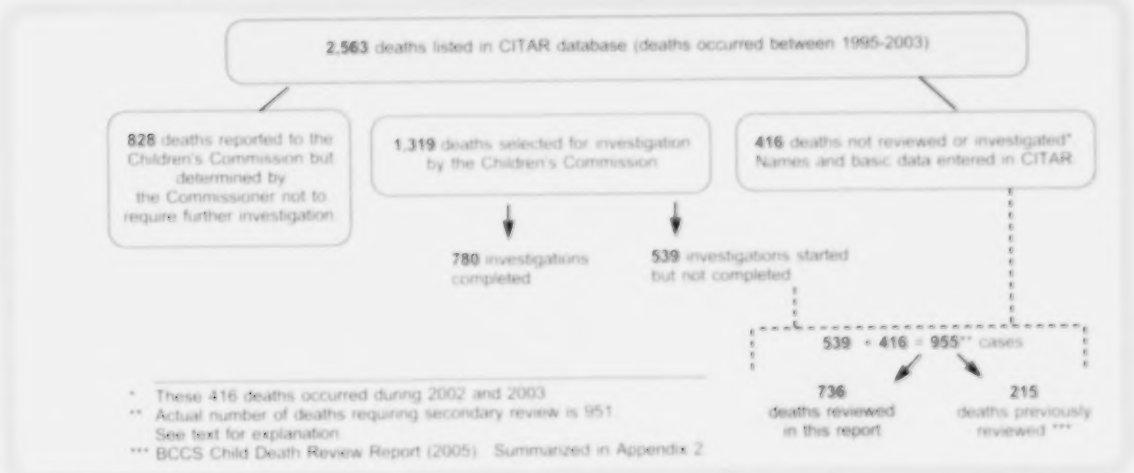
2,563 deaths listed in CITAR database (deaths occurred between 1995-2003)
828 deaths reported to the Children's Commission but determined by the Commissioner not to require further investigation
1,319 deaths selected for investigation by the Children's Commission
416 deaths not reviewed or investigated* Names and basic data entered in CITAR
780 investigations completed
539 investigations started but not completed
539 + 416 = 955** cases
736 deaths reviewed in this report
215 deaths previously reviewed ***
* These 416 deaths occurred during 2002 and 2003
** Actual number of deaths requiring secondary review is 951 See text for explanation
*** BCCS Child Death Review Report (2005). Summarized in Appendix 2

Figure 3 — The 736 deaths reviewed in this report consist of deaths for which an investigation was started but not completed by the Children's Commission, or which occurred during the period between the closing of the Children's Commission and the opening of the CDR Unit at the BCCS.

[1] BCCS Child Death Review Report (2005).

5| All Classifications of Death

The deaths of 736 children were reviewed for this report, including Coroner cases, Non-Coroner Cases and Natural-Expected deaths. The Coroner cases represent Sudden and Unexpected deaths that received a full investigation by the BCCS (i.e., Natural-Unexpected, Homicide, Suicide, Accident, Undetermined classifications). The following sections present a statistical summary of these files and while this review was as complete as possible, there are nevertheless limitations associated with this statistical summary[17].

- The 736 deaths reviewed in this report occurred between 1996 and 2003 (Table 1). There were a total of 3,304 child deaths in B.C. during this time period. Therefore, this report contains a review of approximately 22% of the deaths that occurred between 1996 and 2003, inclusive.

Year of Death	Number (% of total) of Deaths Reviewed in	Total # of Child Deaths in B.C.[18]
1996	1 (<1%)	488
1997	11 (1%)	479
1998	32 (4%)	404
1999	126 (17%)	391
2000	170 (23%)	375
2001	200 (27%)	378
2002	174 (24%)	405
2003	22 (3%)	384
TOTAL	736	3,304

Table 1 — Number and percentage of deaths reviewed for this report and the total number of child deaths in B.C. by year

- The average age at the time of death of the children that comprise the 736 cases was 8.3 years.
- Figure 4 illustrates the age distribution of the children whose deaths were reviewed in this report. Over half (418 or 57%) of the deaths were of neonates and teenagers. The deaths of 89 (12%) infants and 229 (31%) youth accounted for the remaining deaths.

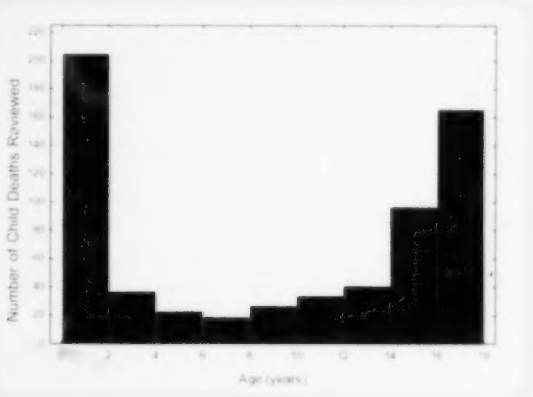

Figure 4 — Distribution of age at time of death for the children reviewed in this report

- There were 432 (59%) male and 304 (41%) female children.
- The deaths of 83 (11%) Aboriginal children were reviewed.
- 220 (30%) children had received services (196) from the Ministry of Children and Family Development (MCFD) or were in the care (24) of the MCFD.
- Almost one-third (225 or 30%) of deaths reviewed occurred in the Vancouver Metro region. The fewest number of deaths reviewed occurred in the Northern region (Table 2). The high number of deaths in the

[17] Limitations regarding the present review are described in Part I, section 1.
[18] Data obtained from the BC Vital Statistics Agency. Includes children up to the age of 19 years old or younger.

Vancouver Metro region is most likely explained by the high percentage of deaths at the only provincial children's hospital located in this region. Children are routinely transported from all areas of B.C. if they are in need of intensive pediatric care. Therefore, the lower number of deaths in the Northern region are likely due to the need to transport children from this region to Vancouver, as there is no tertiary paediatric specialized unit (Level 3 critical care) other than B.C. Children's Hospital [1].

Classification of Death (average age in years)	Vancouver Metro	Fraser	Island	Interior	Northern	Total number of deaths per classification
Natural-Expected (4.0)	151	50	35	11	16	265* (36%)
Accidental (13.2)	30	60	36	76	29	231 (31%)
Natural-Unexpected (5.2)	18	27	25	14	11	95 (13%)
Suicide (16.1)	13	15	14	6	10	58 (8%)
Undetermined (3.3)	3	14	6	8	6	37 (5%)
Homicide (10.9)	5	10	7	4	8	34 (5%)
Non-Coroner Case (5.8)	5	3	6	1	1	16 (2%)
TOTALS	225	179	129	120	81	736

Table 2 — Number, percentage of deaths reviewed for each region by classification of death.
* Two children died out-of-province and not in a region of the BCCS. Their deaths were reported to the BCCS through B.C. Vital Statistics and they are therefore included in the total number of Natural-Expected deaths. As the death occurred outside of B.C., investigation of the death is not under the jurisdiction of the BCCS. However, the CDR Unit reviews all deaths of the children who are residents of B.C. regardless of where the death occurred.

- The leading classification of death was Natural-Expected followed by Accident (Table 2).

- For neonates and youth, the leading classification of death was Natural-Expected, while the leading classification of death for infants and teenagers were Natural-Unexpected and Accident, respectively.

[1] Victoria General Hospital has short term critical care capability at Level 2

Coroner Cases

- Of the 736 child deaths reviewed in this report, 455 (62%) deaths were Coroner cases, that is, Sudden and Unexpected deaths. The remaining 281 were Natural-Expected deaths (including Non-Coroner Cases).
- The deaths of 276 (61%) male and 179 (39%) female children were investigated by the BCCS as Coroner cases.
- The leading classification of death for Coroner cases was Accident followed by Natural-Unexpected (Table 2).
- Nine (2%) of the 455 Coroner cases are still under investigation with three of the deaths classified as Homicide and six of the deaths preliminarily classified as Undetermined.
- Table 2 indicates that there were regional differences in the number of child deaths reviewed. For example, almost one-third (126 or 27%) of all sudden and unexpected deaths reviewed occurred in the Fraser region. Furthermore, Accidental deaths accounted for less than 40% of deaths in all regions except the Interior where 76 (63%) deaths were due to Accident. This statistic reflects the high incidence of vehicular incidents in the Interior for this sample, and is discussed in Section 6.

Summary evaluation of all deaths

A significant number of child death investigations initiated by the former Children's Commission were not completed at the time the Commission closed. The Commission initiated 1,319 investigations between 1996 and early 2002. However, 539 (41%) of these investigations were not completed before the Commission closed and are included in the 951 transition files.

The leading classification of death of the 736 child deaths reviewed was Natural-Expected (i.e., due to natural disease processes) followed by Accident. Together, Natural-Expected and Accidental deaths account for approximately two-thirds of the child deaths reviewed for this report. Correspondingly, very young children (primarily infants) and teenaged children account for a large percentage of the child deaths reviewed, as there was a high incidence of Natural-Expected deaths among infants and a high incidence of Accidental deaths among teenagers.

There were a higher number of deaths of male compared to female children. This gender difference in part reflects the fact that more male than female children died due to Accidental causes and Suicide. This finding was not unexpected as it has been consistently reported that there is a higher incidence of risk-taking behaviour in male children, contributing to the higher rate of Accidental deaths.

While 11% of all deaths reviewed were of Aboriginal children, they comprise approximately 7% of the child population of B.C.[1] In consideration of the fact that the number of Aboriginal child deaths in this review is an underestimate, this indicates that there are a disproportionate number of Aboriginal child deaths in B.C.[2] Differential mortality rates between Aboriginal and non-Aboriginal children likely reflect complex social issues that the CDR Unit would be oversimplifying in attempts to formulate hypotheses regarding underlying causes. However, it is known from other studies that

[1] BC Vital Statistics Agency, Regional analysis of health statistics for Status Indians in British Columbia 1992-2002, April 2004.
[2] Limitations regarding the present review are described in Part I, section 1.

there is a disparity between infant mortality rates among Aboriginal and non-Aboriginal British Columbians and that this disparity is especially obvious in urban areas[1]. In addition, we also know that there is a much greater risk of suicide among Aboriginal youth. As a further example of the complexity of the issue, Edwards et al[2] have shown a correlation between fatal injuries and employment status in a family—there is a higher death rate for children in families lacking an employed adult- and there is a higher rate of unemployment among Aboriginal people in B.C.[3] Regardless of the complexity of the factors that contribute to Aboriginal child death, the CDR Unit will continue to monitor these deaths carefully and work closely with the Aboriginal communities in attempts to understand this trend.

Finally, almost one-third of all sudden and unexpected deaths reviewed occurred in the Fraser region. However, this number is not disproportionate to the population size of this region (see Figure 2). In fact, analysis of Figure 2 indicates that the Fraser Health Authority region has traditionally had a relatively low sudden and unexpected child death rate. While the B.C. average child death rate between 1996 and 2003 (excluding Natural-Unexpected deaths) was 15.5 deaths per 100,000 children, the average for the Fraser Health Authority was 12.8. In contrast, compared to their population size, there were a relatively high number of deaths reviewed for the Northern and Interior regions. Examination of the data from this review does not currently explain this trend. However, the CDR Unit will continue to monitor regional differences in child death rates.

[1] Luo Z-C et al. (2004). Infant mortality among First Nations versus non-First Nations in British Columbia: temporal trends in rural versus urban areas, 1981-2000. International Journal of Epidemiology 33:1252-1259.

[2] Edwards P et al. (2006). Deaths from injury in children and employment status in family: analysis of trends in class specific death rates. British Medical Journal 333:119.

[3] BC/Yukon Region Labour Force Survey March 2006. Service Canada. www.servicecanada.gc.ca

6| Accident

The Accidental deaths of 139 male and 90 female children were reviewed.

There were 231 Accidental deaths out of the 736 deaths reviewed. There were two deaths that were further classified as Sudden Unexpected Deaths in Infancy which are reported in Section 11 of this report. The remaining 229 deaths are reported in this section.

- The average age of the 229 children who died due to Accident was 13.2 years compared to 8.4 years for all 736 children.
- 147 (64%) deaths were of teenagers. Youth accounted for 76 (33%) of Accidental deaths. Only six (3%) accidental deaths involved neonates or infants.
- 32 (14%) of the Accidental child deaths reviewed were of Aboriginal children (21 male and 11 female children).
- 39 (17%) children had received services from the MCFD, while no child who was in the care of the MCFD died due to Accident.
- The greatest number of Accidental deaths occurred in the Interior region (Table 3).
- Figure 5 indicates that the leading circumstance of Accidental death was vehicular accidents followed by drowning, fire and poisoning and/or drug intoxication (PDI) for both Aboriginal and non-Aboriginal children. This is consistent with the review of more recent child deaths completed by the CDR Unit[1] and further supports the CDR Unit's recent work with Insurance Corporation of B.C. (ICBC) to lower the incidence of motor vehicle related deaths among children.
- Vehicular accidents were the leading circumstance of deaths in all regions. Drowning was the second leading circumstance in the Interior, Island, Northern and Vancouver Metro regions. In the Fraser region fire was the second leading circumstance of death, followed by drowning.

BCCS Region	Number (%) of Accidental Deaths Reviewed
Interior	74 (32%)
Fraser	60 (26%)
Island	36 (16%)
Vancouver Metro	30 (13%)
North	29 (13%)
TOTAL	229

Table 3 — Number and percentage of Accidental deaths reviewed by BCCS region

Electrocution	1
Firearms	1
Industrial	2
Medical	2
Asphyxia	4
Hypothermia	4
Fall	6
Other	8
PDI	10
Fire	19
Drowning	24
Vehicular	148

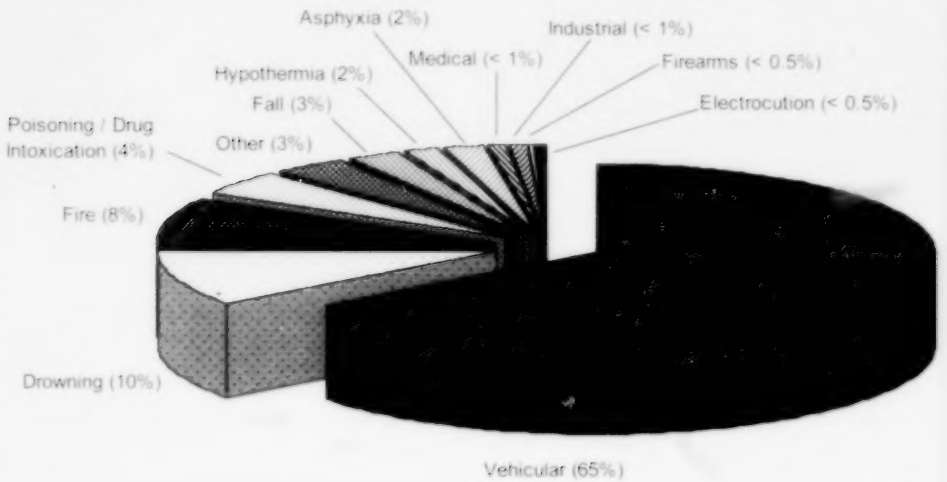

Figure 5 — Number and percentage of accidental child deaths reviewed by circumstance of death

[1] BCCS Child Death Review Report (2005).

- The leading medical cause of death for 96 (42%) children was head and/or neck injuries (Table 4) which were largely incurred as a result of vehicular incidents.
- In nine (4%) cases, the child was impaired due to alcohol or drug use at the time of the accident. In six (3%) of these nine cases the child was involved in a motor vehicle incident.
- In two (<1%) cases, the child was supervised by parents who were impaired at the time of the accident. In an additional ten (4%) cases, the supervising individual had a history of one or both of alcohol or drug abuse.

Therefore, out of the 83 Aboriginal deaths reviewed in this report, almost 25% were the result of a motor vehicle incident. In comparison, 20% of non-Aboriginal deaths were the result of a motor vehicle incident. The CDR Unit will continue to monitor this trend to determine its significance.

General Cause of Death	Number (%) of Accidental Deaths Reviewed
Head and/or neck injury	96 (42%)
Multiple injuries (e.g. multiple blunt force injuries	43 (19%)
Drowning	31 (13%)
Inhalation (i.e. smoke, fumes)	15 (6%)
Asphyxia	14 (6%)
PDI	10 (4%)
Heart injury	5 (2%)

Table 4 — Number and percentage of Accidental deaths by leading medical cause of death. The cause of death has been generalized for clarity.

Vehicular accidents

- Of all 229 Accidental deaths, 148 (65%) resulted from vehicular accidents. Pedestrians who were hit by motor vehicles are also included in this section.

Vehicular Accidental deaths involving 87 male and 61 female children were reviewed.

- The average age of children who died in vehicular accidents was 14.4 years.
- Although more males than females died in vehicular accidents, the proportion of vehicular accidental deaths to the total number of Accidental deaths was similar for female and male children.
- There were 107 (72%) teenagers and 41 (28%) youth who died due to a motor vehicle incident. This finding clearly indicates that teenagers should be targeted by prevention strategies.
- 20 (13%) of the children who died due to a motor vehicle incident were Aboriginal.
- While 22 (15%) of the children involved in vehicular accidents had received services from the MCFD, there were no children who died in vehicular accidents who were in the care of the MCFD.
- The Interior region had the highest number of vehicular accidents, 56(38%) (Table 5), accounting for 74% of all Accidental deaths in the Interior region. In comparison, vehicular accidents accounted for 53% (16) of all Accidental deaths in the Vancouver Metro region.
- Some of the factors cited as contributory to these fatal vehicular accidents differed by region as indicated by Table 5.
- Inattention was cited as a contributory factor in a total of 19 (13%) of all vehicular child deaths.
- Weather and adverse conditions were cited in a total of 15 (10%) of all vehicular child deaths.
- Other contributing factors include, in order, mechanical failure of the vehicle (four), street racing (two) and other dangerous

driving practices (two), poor lighting and visibility (two), driver fatigue (three), and lack of experience (two).

- Dry or wet road conditions were present in 85 (57%) and 31 (21%) accidents, respectively. In the remainder of cases, data on road conditions was unavailable.
- Snow or ice were present in nine (6%) and five (3%) accidents, respectively. This fact suggests that these adverse road conditions do not necessarily result in increased fatal vehicular accidents. Drivers may use more caution in these conditions and experience a false sense of security on dry and/or wet conditions.
- The role of the decedent child in the vehicular accident is listed in Table 6.
  - Teenagers were operators or front seat passengers in 65 accidents, which accounts for 61% of all motor vehicle incidents involving teenagers.
  - In 15 (63%) of 24 pedestrian accidents, the child was a youth. The remaining nine (37%) pedestrians were teenagers.
- The leading underlying cause of death resulting from vehicular accidents for 90 (60%) children was head and/or neck injury, followed by multiple blunt force injuries (42 or 28%).
  - 18 (75%) pedestrian deaths were due to head and/or neck injuries.
  - In one of four accidents involving a bicyclist, the child was wearing a helmet and died of multiple injuries. Helmet usage among the three other bicyclists was not available or unconfirmed. However, these three children also died as a result of head injuries. This illustrates the need for accurate and improved child death investigations in order to obtain consistent data that can assist the CDR Unit in the measure of helmet effectiveness in prevention of deaths through aggregate review.
  - In four out of five vehicular deaths involving a motorcycle, the child was wearing a helmet. There were two motorcycle deaths as a result of head injuries, including the one child who was not wearing a helmet.

BCCS Region	Number of vehicular accidents citing factor			
	Total	Driver Error	Speed	Alcohol or Drugs
Interior	56 (38%)	20	13	10
Fraser	39 (26%)	14	17	3
Island	21 (14%)	12	2	8
Vancouver Metro	16 (11%)	6	9	4
Northern	16 (11%)	3	6	8
TOTAL	**148**	**55**	**47**	**33**

Table 5 — Total number and percentage of deaths reviewed involving a vehicular accident by BCCS region. Number and percentage of Coroner cases citing driver error, speed or alcohol and drugs. More than one contributory factor may exist for each case.

Role of Child	Number (%) of Vehicular Deaths Reviewed
Passenger of motor vehicle	70 (47%)
- *Back seat*	*26*
- *Front seat*	*26*
- *Other or data not available**	*18*
Operator of motor vehicle	48 (32%)
Pedestrian	24 (16%)
Cyclist/go-cart operator	6 (4%)
TOTAL	**148**

Table 6 — Number and percentage of vehicular incident deaths reviewed by the role of the child in the incident.

*For example, accidents in which the position is unknown include cases in which the child was riding in the back of a truck, on a parent's lap or in a boat.

- Table 7 lists the type of motor vehicles involved in the fatal accidents.
- 113 of the 118 vehicular accidents, in which the child was an operator or passenger, were multiple vehicle accidents.
  - There were five accidents in which three vehicles collided.
  - In multiple vehicle accidents, the child's vehicle collided with:
    - truck/van/SUV/RV (31 deaths or 21%)
    - car (27 deaths or 18%)
    - semi-trailer (six deaths or 4%)
    - motorcycle (two deaths or 1%)
- In six (4%) accidents, in which the child was the operator of the vehicle, the child was not licensed. This included three children who were operating a motorcycle.
- In 100 accidents, seatbelt or restraint use was possible. In 84 of these accidents, data on restraint usage was obtained.
  - There were 43 (51%) accidents in which the child's use of a restraint was confirmed. However, in 41 (49%) cases a restraint was not used. The average age of children who weren't wearing seatbelts was 16.2 and 14.9 for wearers of seatbelts. This indicates that it is mostly teenagers that are non-compliant with seatbelt laws.
  - Excessive speed was listed as a contributory factor in 17 (39%) accidents where seatbelt use was reported, and 21 (51%) accidents in which no seatbelt was used. This suggests that seatbelt use may be especially effective at saving lives in vehicular accidents involving excessive speed.
  - Furthermore, in seven of the 44 accidents in which a restraint was used, it was used incorrectly. There is a recognized need both provincially and nationally, as indicated by recent initiatives, to address the lack of and misuse of seatbelts by children.
- The decedent child was impaired in 20 (13%) of vehicular accidents.
  - 12 of these children were operating the vehicle, four were pedestrians and four were passengers.

Type of motor vehicle in which child was operator or passenger	Number (%) of Vehicular child deaths reviewed
Car	60 (41%)
Truck, van SUV, RV	33 (21%)
All terrain vehicle	8 (6%)
Data not available	8 (5%)
Motorcycle	5 (3%)
Boat	2 (1%)
Commercial truck	1 (1%)
Farm vehicle	1 (<1%)
TOTAL	118

Table 7 — Number and percentage of Accidental child deaths reviewed by type of motor vehicle in which the child was either an operator or passenger

The operator of the vehicle in which the child was a passenger was impaired in ten (7%) accidents. The driver of a second vehicle which collided with the child's vehicle, was impaired in two (1%) accidents.

Drowning accidents

The drowning deaths of 21 male and ten female children were reviewed.

- Drowning was the medical cause of death for 31 (13%) child deaths reviewed in this report[7].
- Table 8 indicates that children were engaged in a variety of activities at the time of drowning.
  - Out of the 31 drownings six (19%) were preceded by a vehicular accident or a fall in one (3%) case.

[7] Note that the circumstance of death for 24 children was drowning (Figure 4). However, the medical cause of death was drowning for 31 children. For example, a child may have been in a vehicular incident (i.e., the circumstance of death) in which the child ultimately died in a body of water (i.e., the cause of death was drowning).

Activity at Time of Drowning	Number (%) of Drowning Deaths Reviewed
Playing in or around water	12 (39%)
Other or data not available	6 (19%)
Boating	4 (13%)
Passenger/operator of vehicle	4 (13%)
Bathing	3 (10%)
Snowboarding	2 (6%)
TOTAL	31

Table 8 — Number and percentage of drowning deaths reviewed by activity at time of drowning

Location of Drowning*	Number (%) of Coroner Cases Reviewed
River or creek	12 (42%)
Lake	6 (19%)
Other or data not available	5 (16%)
Bathtub	3 (3%)
Residential swimming pool	2 (<1%)
Ocean	2 (<1%)
TOTAL	31

Table 9 — Number and percentage of Coroner cases reviewed by location of drowning

Source of Fire	Number (%) of Fires
Cigarettes	3 (23%)
Combustibles	3 (23%)
Cooking appliance	3 (23%)
Furnace or fireplace	2 (15%)
Unknown	2 (15%)
TOTAL	13

Table 10 — Number and percentage of fires by source of fire

- For 12 (39%) children, the fatal drowning incident was preceded by playing in and around water (e.g., swimming, jumping into the water from a natural elevation, playing with floatation devices such as inner tubes). The summer of 2006 has raised public awareness of the risk of being in and around water. The CDR Unit will continue to monitor drowning deaths to determine the effect of this increased awareness and published strategies of the past couple of years on the number of future child drowning deaths.

- Drowning occurred in various locations as listed in Table 9. In addition to the locations listed in the table, drowning also occurred near a dam, in a water filled quarry pit, and a road side ditch.

- Eight (26%) children could swim, while another eight (26%) could not. Information on swimming ability was unavailable for the remaining children.

- Alcohol and/or drugs were cited as a factor in six (19%) of the drowning deaths.

- In addition to the 31 drowning fatalities, there were three additional water-related fatalities — two in which the cause of death was due to hypothermia and one due to multiple injuries sustained while jumping into water from a height.

Other types of accidents

Fire:

- 19 (8%) children died in 13 separate fires, with the source listed in Table 10. There were four fires that resulted in the deaths of two or more children within a family.

- 11 male and eight female children died due to fire-related injuries.

- The medical causes of death were smoke inhalation, carbon monoxide poisoning or inhalation of products of combustion.

- Seven (22%) children who died due to fire-related injuries had received services from the MCFD.

- Five (38%) of the 13 fires were started by adults, one (8%) by a child, with data not available or undetermined for the remaining seven fires.

- Smoke detectors were present in three (23%) homes, not functioning in one home, not

found in five (38%) homes, with no data available for the remaining homes.

- For five (38%) of the families there was no fire escape plan in place, while it is unknown for the remaining eight fires, whether a plan was in place.

Public safety campaigns need to be revisited to remind the public to ensure that they have operational smoke detection in their homes.

Poisoning and drug intoxication:

- There were ten (4%) accidental poisoning and drug intoxication related deaths as listed in Table 11.
- In four cases, the child ingested an overdose of a prescription medication (methadone or morphine), which in all cases, had been prescribed to someone else.
- In five cases, the child ingested more than one drug.

Falls:

- Six (3%) out of 229 Accidental deaths were due to accidental fall; four male and two female children (two teenagers and four youth).
- Three (1%) of the six children who died due to a fall, fell from a natural elevation into a body of water and died from blunt force trauma injuries, not from drowning.

Summary evaluation of Accidental deaths

Several important findings emerged following review of 229 Accidental deaths. Firstly, the data indicate that teenaged males are at greatest risk of Accidental death. This statistic is not surprising as teenaged males are more likely to engage in risk taking behaviour than females and supports our previously reported findings of gender differences for Accidental deaths[3]. This statistic also strongly indicates the need for targeted prevention programs.

Type of Drug	Number (%) of Child PDI Deaths Reviewed
Methadone	3 (33%)
Morphine	3 (33%)
Methylenedioxy methamphetamine (MDMA or Ecstasy)	2 (22%)
Heroin	2 (22%)
Cocaine	2 (11 %)
Ethanol/methanol	2 (11%)
Cannabis	1 (11%)

Table 11 — Number and percentage of poisoning and drug intoxication deaths in which the circumstance of death was a poisoning/drug intoxication by the type of drug ingested by the child. More than one drug was ingested by the child in five cases.

Secondly, the reviewed data also suggest that important regional differences exist in factors contributing to Accidental child death due to motor vehicle incidents. This review found that driver error, speed and alcohol and/or drug intoxication were contributory factors to motor vehicle incidents that differed by BCCS region. For example, in 56% of motor vehicle incidents in the Metro region, speed was a contributory factor in comparison to ten per cent of vehicular incidents in the Island region. In addition, there were a high percentage of motor vehicle incidents in the Interior region. The regional differences identified in this data do not correspond to current data. It is, therefore, a provincial picture that will be

[3] BCCS Child Death Review Report (2005).
[4] Kmet L, Macarthur C (2006). Urban-rural differences in motor vehicle crash fatality and hospitalization rates among children and youth. Accident Analysis and Prevention 38:122-127.

monitored. Regional differences could be due to differences between urban and rural transportation characteristics. A study of motor vehicle crashes involving children (0-19 years) in Alberta between 1997 and 2002 found higher fatality rates in rural compared to urban areas[9]. Numerous differences between urban and rural areas were suggested in that study that may explain the disparity in traffic fatalities, including distances travelled, traffic flow characteristics, road safety features, access to emergency care and driving behaviours such as seatbelt use.

Thirdly, almost half of all Accidental deaths were attributable to head and/or neck injury, resulting mostly from motor vehicular accidents. This high incidence of head injury could be due to the lack of restraint use, as only half of children in vehicles with restraint systems utilized these devices. Seat belt use has been mandatory in B.C. since 1977. While a recent Transport Canada survey[10] of seatbelt use reported that use in rural B.C. was 86.0% and 91.9% in urban areas of B.C., the present findings suggest a much lower usage rate, at least among teenagers. Another Transport Canada study found that 8,600 driver and right front passenger lives were saved by seatbelts between 1990 and 1997[11]. This is relevant to the present findings as teenagers were also more likely to be operating the vehicle or to be a front seat passenger. A recent ICBC campaign "Zero Crash Month" states that seatbelts are the single most effective protective device available to adults in vehicles as unbelted occupants are at risk of ejection from the vehicle or at striking other occupants or the interior of the vehicle[12].

Unequivocally, the lives of teenagers can be saved by compliance with seatbelt laws.

Finally, as discussed above, many of these deaths are of teenagers. Although these statistics are alarming, a Graduated Licensing Program (GLP) has placed restrictions on young drivers since 1998, with full implementation of this program in 2000. Evaluation of this program in 2000 indicated 16% fewer accidents among new drivers following GLP implementation[13]. It is expected that this program will contribute to lower mortality rates due to motor vehicle incidents among new teenaged drivers. The BCCS is collaborating with the B.C. Injury Research Prevention Unit, ICBC, the RCMP and the Road Safety Unit of the Police Services Division in a study of traffic fatalities in B.C. While not restricted to child fatalities, this collaborative study will provide valuable data to the CDR Unit in the identification of factors contributing to motor vehicle incidents involving children. In addition, the BCCS will be developing a detailed investigative motor vehicle incident protocol to standardize and improve the data currently collected during investigation of these fatal accidents.

In summary, the data above indicate that there are many contributory factors to accidents. As Accidental deaths are entirely preventable, interventions and programs aimed to reduce these deaths will have the greatest impact on reducing the child death rate in the province of British Columbia.

[10] Transport Canada's Surveys of Seat Belt Use in Canada 2004-2005. Fact Sheet TP 2436E.
[11] Transport Canada. Evaluation of the effectiveness of air bags and seat belts: estimates of lives saved among front seat occupants of light-duty vehicles involved in collisions attributable to the use of seat belts and air bags in Canada. Fact Sheet TP 13187E.
[12] ICBC. October 2006 Provincial News Release. ICBC and police focus on seatbelt use for Zero Crash Month-October 3.
[13] Graduated Licensing Program Interim Evaluation Report-Year 3. ICBC (2000).

7| Homicide

There were 34 deaths out of the 736 reviewed that were due to Homicide.

The Homicide deaths of 21 female and 13 male children were reviewed.

- The deaths involved five (15%) infants, 11 (32%) youth and 18 (53%) teenagers.
- The average age of all children was 10.9 years. Female children were on average one year younger than male children.
- Eight (23%) Homicide deaths were of Aboriginal children, five female and three male children.
- Out of the 34 Homicide deaths, 12 (35%) children had received services from the MCFD, and two (6%) were in the care of the MCFD at the time of their death.
- 18 (53%) Homicide deaths reviewed occurred in the Fraser or Northern regions (Table 12).
- The circumstances of the 34 Homicide deaths are listed in Table 13.
- There were nine (26%) abuse-related deaths; including three deaths due to Shaken Baby Syndrome.
  - Abuse-related deaths involved four male and five female children, all aged four or younger.
  - In two abuse-related deaths, crying of the child and post-partum depression were reported as "triggers" to the abuse.
  - In three abuse-related deaths there was a recorded history of prior abuse and/or neglect.
  - Five children had received services from the MCFD, while one was in the care of the MCFD.
- In nine (26%) cases the homicide was committed by a relative; eight were male relatives, including five fathers or stepfathers. There were three male and six female children.
- While data on family history was not available for every child, for four (12%) children, there was a family history of violence.
- There were seven (21%) Homicide deaths resulting from use of a firearm. A shotgun was used in two instances, with a handgun (revolver), a rifle and an AK-47 assault rifle used in one instance each. Firearm type was unknown in the two remaining firearm Homicide deaths.
  - All seven firearm deaths were of teenagers with an average age of 17.1 years and involved four female and three male children.
  - No child who died due to a firearm injury had received services or was in MCFD care.
  - There was intent to harm ruled in at least six (23%) of the Homicide deaths involving a firearm, with unknown intent in one homicide, involving a break and enter. Therefore, the firearm fatalities reported were not due to accidental misuse or mishandling of a firearm. In three

BCCS Region	Number (%) of Homicide Deaths Reviewed
Fraser	10 (29%)
Northern	8 (20%)
Island	7 (20%)
Vancouver Metro	5 (15%)
Interior	4 (12%)
TOTAL	34

Table 12 — Number and percentage of Coroner cases reviewed by BCCS region

Circumstances of Death	Number (%) of Homicide Deaths Reviewed
Firearms	7 (21%)
Stabbing/cut	7 (21%)
Other injuries	7 (21%)
Strangulation	4 (12%)
Shaken-baby syndrome	3 (9%)
Suffocation	2 (6%)
Drowning	2 (6%)
Undetermined	1 (3%)
Case not concluded*	1 (3%)
TOTAL	34

Table 13 — Number and percentage of Homicide deaths reviewed by circumstance of death

*The death is still under investigation.

instances, it was known that the firearm had not been securely stored.

- Two (6%) of the Homicide deaths were followed by suicide of the related assailant (i.e., murder-suicide).

Summary evaluation of Homicide deaths

Almost five per cent of all deaths reviewed in this report were Homicide deaths. However, in B.C. between 1996 and 2003 there were 93 child Homicide deaths, indicating that 36 per cent of Homicide deaths during this time period were reviewed in this report. While almost three dozen deaths due to Homicide remained incomplete investigations by the Children's Commission and were therefore reviewed in this report, it is important to note that Homicide deaths of children in Canada have been decreasing since 2001 and was the lowest in 2004 since recording of this data began in 1974[33]. The fact that these investigations had not been completed by the Children's Commission is not unusual as the delay in these case closures is often due to lengthy police investigations. The cases are not usually concluded without police consultation and approval to protect the integrity of any criminal proceedings. It should also be noted that the reported number of child Homicide deaths are typically thought to be under-reported as some deaths classified as Accidental, Natural or Undetermined may in fact be due to non-accidental injury (i.e., abuse-related deaths). In the present report, out of the 34 Homicide deaths, 26 per cent of deaths were due to abuse-related injuries, including three deaths due to Shaken-Baby Syndrome. The CDR Unit recognizes the importance of accurately identifying these deaths as Homicide deaths and is providing valuable data to researchers at the B.C. Injury Research Prevention Unit (BCIRPU) to survey non-accidental head injury in children aged zero to four years. The BCIRPU will rely on child fatality data provided by the BCCS.

Based on recent evidence, it is now possible to identify Shaken Baby Syndrome by the presence of a specific constellation of injuries, most importantly, specific retinal hemorrhages that are not seen in any other mechanism of injury. New initiatives are underway in B.C. with pilot projects in 19 Lower Mainland health authorities. New parents are being recruited from six community hospital maternity wards in a large clinical trial to test whether the materials change attitudes and alert parents to the triggers that put them at risk of harming their child. Early results are expected in Spring 2007. The B.C. CDR Unit is involved in this initiative along with MCFD and the BCIRPU. The MCFD has contributed significant funding to this project.

There were more female than male children who died due to Homicide. This statistic is atypical and may not accurately reflect the true Homicide rate, as homicide rates in Canada are similar for female and male children, although infant boys tend to be at greater risk for family-related homicide than infant girls[34]. However, this atypical finding may result from the fact that the present data is not representative of child Homicide deaths.

There were a greater percentage of deaths due to Homicide in the Northern and Interior regions. This percentage is even more significant in consideration of the smaller populations of these communities. There are likely many social and economic determinants that could contribute to regional differences in Homicide child deaths. The CDR Unit will, however, continue to monitor these deaths and any relevant research that can assist in identifying trends.

[33] Family Violence in Canada: A Statistical Profile 2006. Canadian Centre for Justice Statistics. Statistics Canada.

8| Suicide

There were 58 child deaths out of the 736 reviewed in this report that were due to Suicide.

The Suicide deaths of 42 male and 16 female children were reviewed.

- The Suicide deaths of 48 (83%) teenagers and ten (17%) youths were reviewed.
- The average age of children who died due to Suicide in this sample was 16.1 years. The youngest child was nine years of age.
- Children had received services from the MCFD in 15 (26%) cases or were in the care of the MCFD in four (7%) cases.
- 15 (26%) of the Suicide deaths were of Aboriginal children.
  - Five (33%) of the Aboriginal Suicide deaths were of children who had received services from the MCFD
  - Three (20%) of the Aboriginal Suicide deaths were of children who were in the care of the MCFD.
- Table 15 lists the circumstances of the 58 Suicide deaths. Over half of all Suicide deaths were due to hanging.
- Some circumstances of death differed by region.
  - Almost 75% (11 deaths) of Suicide deaths in the Fraser region were due to hanging. Of the 32 Suicide deaths by hanging, 34% of hanging deaths occurred in the Fraser region.
  - There were no firearm deaths in the Vancouver Metro region.
  - 40% (four deaths) of the Suicide deaths in the Northern region involved firearms.
- Deaths resulting from use of a firearm included the use of a rifle in eight deaths, a handgun-revolver in one death, and a shotgun in one death.
  - Of the ten Suicide deaths involving a firearm, the firearm was not safely stored from access by a child in six (60%) instances.
  - For two of the deaths involving a firearm, ammunition had been stored with the firearm in contravention to Federal regulations.
  - Eight (80%) of the firearms were owned by family members of the child.
  - One child was impaired by alcohol and cannabis prior to death by a firearm.
- Death due to intentional poisoning/drug intoxication among five (9%) children involved use of prescription and non-prescription medication, antifreeze and exhaust fumes (carbon monoxide).
- Identified risk factors were present in many of these Suicide deaths, including family discord and a history of psychiatric illness.
  - In ten (17%) deaths, depression or other psychiatric disorders were reported. There were three children receiving prescription medication treatment for depression.
  - For nine (15%) children, there was a family history of violence, and/or alcohol and drug abuse.

BCCS Region	Number (%) of Suicide Deaths Reviewed
Fraser	15 (26%)
Island	14 (24%)
Vancouver Metro	13 (22%)
Northern	10 (17%)
Interior	6 (10%)
TOTAL	58

Table 14 — Number and percentage of Suicide deaths by BCCS region

Circumstances of Death	Number (%) of Suicide Deaths Reviewed
Hanging	32 (55%)
Firearms	10 (17%)
Poisoning and/or drug intoxication	5 (9%)
Fall	5 (9%)
Drowning	3 (5%)
Vehicular Injury	2 (3%)
Asphyxiation	1 (2%)
TOTAL	58

Table 15 — Number and percentage of Suicide deaths reviewed by circumstance of death

- Nine (15%) children were living on their own.
- Two (3%) children were living in group homes.

Summary evaluation of Suicide deaths

Eight per cent of all the child deaths reviewed for this report were due to Suicide. While eight per cent of the total 734 deaths were of Aboriginal children, 26 per cent of 58 Suicide deaths were of Aboriginal children. This statistic was not unexpected as the Aboriginal child suicide rate has been estimated to be five to 20 times higher than that of non-Aboriginal children[i]. More significantly, it appears that 90 per cent of the Aboriginal youth suicides occur in approximately 10 per cent of British Columbia's Aboriginal bands[ii]. There are likely numerous contributory factors to elevated Suicide risk in Aboriginal youth such as poverty, family discord, poor physical and social environment and substance abuse in addition to other factors. Chandler and Proulx (2006) suggest that processes in identity and cultural development are important determinants of suicidal behaviour in Aboriginal youth. Their research demonstrates that Aboriginal communities that have succeeded in preserving cultural ties to the past and have some control over their present and future communities have a significantly lower youth suicide rate than communities who lack these cultural characteristics[iii].

There were also a disproportionate number of Suicide deaths among children who had received services or who were in care of the MCFD. This statistic is not entirely unexpected as it has previously been reported by the Provincial Health Officer that children and youth in care have a significantly higher mortality rate than other children[iv] with Suicide deaths as the fourth leading cause of death.

Greater access to firearms because of recreational firearm use with inappropriate storage may be suggested by the high number of long bore weapons that were used in Suicide deaths. The CDR Unit will take this finding to the Chiefs of Police to discuss possible action plans to enforce the law for safe storage of firearms, especially where children reside. The CDR Unit will also be discussing with the identified Aboriginal communities that have been found to have the highest rate of youth suicide, the findings of this review in an effort to identify prevention efforts.

Finally, a common finding in the review of suicide cases is that the youth and teenagers who die by suicide, frequently voice their intent and their plan; it may be published online, or they report to school counsellors or medical/mental health service providers. It is not uncommon that youth and teenage threats of violence to themselves or others is in advance. Inadequate intervention in these instances may be a contributing factor.

[i] Chandler, M. (2005). Suicide and the persistence of identity in the face of radical cultural change. Presentation to the Assembly of First Nations National Policy Forum.

[ii] Chandler, M. Aboriginal Youth Suicide and Community Intervention. Human Early Learning Partnership research project summary (University of British Columbia). www.earlylearning.ubc.ca

[iii] Chandler, M. & Proulx, T. (2006). Changing selves in changing worlds: Youth suicide on the fault-lines of colliding cultures. In Suicide among Indigenous peoples: The research. A. Leenaars, M. EchoHawk, D. Lester, L. Leenaars, & E. Haramic, (Eds.). Archives of Suicide Research.

[iv] Children and Youth in Care: An epidemiological review of mortality, British Columbia, April 1974 to March 2000. A technical report of the Office of the Provincial Health Officer. (May 2001).

9| Natural-Unexpected Deaths

The Natural and unexpected deaths of 44 male and 30 female children were reviewed.

The deaths of 95 children who died Natural-Unexpected deaths were reviewed. Of these 95 deaths, 21 were further classified as Sudden Unexpected Deaths in Infancy (SUDI) and are reported in Section 11 of this report. The remaining 74 deaths are reported here.

- 28 (38%) youth, 17 (22%) teenagers, 16 (22%) infants, and 13 (18%) neonates died Natural-Unexpected deaths.
- The average age of the 74 children who died due to Natural-Unexpected causes was 6.7 years.
- The numbers of deaths reviewed by region are listed in Table 16. The highest number of deaths reviewed occurred in the Island region.
- Seven (10%) children were Aboriginal; five male and two female children.
- 17 (23%) children had received services from the MCFD and one (1%) child was in the care of the MCFD.
- There were many different medical causes of death, as identified by the investigating Coroner. Most commonly, for 13 (17%) children the cause of death was cardiac arrhythmia. The second most frequent cause of death was sepsis, as reported in six (8%) of cases. Generalized cause of death is listed in Table 17.
- Infection affected primarily neonates, infants and youth, while neurological causes of death primarily affected youth. Of 17 cases with a bacterial or viral infection as the cause of death, 14 (82%) cases involved children five years of age or younger.
- The largest gender difference was observed for infection- and neurological-related causes of death.
  - 15 (34%) out of 44 males and two (7%) females out of 30 died due to a bacterial or viral infection. Conversely, a higher percentage of females (30% or nine deaths) died due to neurological-related causes of death compared to males (11% or five deaths).
- Recent medical events such as a cold/flu, cough, fever, vomiting, and diarrhea were reported for 48 (65%) children.
  - Cold and/or flu, vomiting and fever were each reported in approximately 20% of deaths.
  - For 25 (34%) children, two or more recent medical events were reported.
- Prescription medications were given to 11 (15%) children and typically included antibiotics.
  - Five children who were taking prescription medication were also taking non-prescription medication.
  - Among the ten (14%) children who were administered a non-prescription medication, a product containing acetaminophen was most frequently

BCCS Region	Number (%) of Natural-Unexpected Deaths Reviewed
Island	22 (30%)
Fraser	19 (26%)
Vancouver Metro	14 (19%)
Interior	12 (16%)
Northern	7 (9%)
TOTAL	74

Table 16 — Number and percentage of Natural-Unexpected deaths by BCCS region of death

Medical Cause of Death	Number (%) of Natural-Unexpected Deaths Reviewed
Heart-related	27 (36%)
Infection	17 (23%)
Neurological-related	14 (19%)
Lung-related	10 (14%)
Other	4 (5%)
Endocrine-related	2 (3%)
TOTAL	74

Table 17 — Number and percentage of Natural-Unexpected deaths reviewed by the body system involved in the cause of death. The cause of death has been generalized for clarity.

administered. This finding is not unexpected as acetaminophen is frequently recommended by pharmacist and physicians for the treatment of fever and pain in children.

  - Fever was reported as a recent medical event for eight (80%) children who had been given a non-prescription drug product.

- Many children had received a previous diagnosis of a disorder, syndrome or illness.
  - There was a previous diagnosis of a congenital anomaly for 27 (36%) children, including five that affected the heart.
  - 17 male and ten female children had been diagnosed with a congenital anomaly.
  - Three children had cerebral palsy
  - Two children had Down Syndrome.
- In four (5%) deaths there were perinatal complications such as prematurity found to contribute to the death.
- 24 (33%) children had received previous medical treatment for a medical condition or diagnosis, which included hospitalization, surgery, medication, or monitoring of their medical condition.

Summary evaluation of Natural-Unexpected deaths

Thirteen per cent of all child deaths reviewed in this report were Natural-Unexpected deaths. This includes 20 deaths that were further classified as Sudden Unexpected Deaths in Infancy.

There were a higher percentage of deaths due to infection in male than in female children. Conversely, there were a higher percentage of neurological related deaths in female than male children. Furthermore, infection primarily affected younger children, suggesting that younger male children may succumb to infection more rapidly and before an infection can be isolated for treatment. It is commonly reported that there is a greater mortality rate among male compared to female infants[1], the present data may reflect biological gender differences.

While the above deaths were classified as Natural-Unexpected, many of the children had a lowered life expectancy due to a diagnosed genetic disorder or congenital illness. Following three of the Natural-Unexpected deaths due to meningococcal infection, the investigating Coroner made recommendations to various health agencies and organizations. For two deaths, recommendations were made regarding a vaccination program. Due in part to these recommendations a vaccination program for meningitis is now in place in B.C. and should reduce the number of child deaths due to this preventable infection.

[1] Mathews TJ, MacDorman MF. (2006). Infant mortality statistics from the 2003 period linked birth/infant death data set. National Vital Statistics Reports 54:1-29.

10| Undetermined

The deaths of 37 children out of the 734 reviewed were classified as Undetermined[1]. Of these, 18 were further classified as Sudden Unexpected Deaths in Infancy (SUDI) and are reported in Section 11 of this report. The remaining 19 deaths are reported in this section.

Six of the deaths are currently classified preliminarily as Undetermined as the investigation has not been concluded. There is one death investigation awaiting completion in each of the Fraser, Island and Northern regions and three in the Interior region.

- Ten (53%) youth, five (26%) teenagers, two (10%) infants, and two (10%) neonates deaths were classified as Undetermined.
- Three children who died an Undetermined death were Aboriginal.
- Five (26%) children were in the care of the MCFD and four (21%) had received services from the MCFD.
- The regional distribution of Undetermined deaths is listed in Table 18.
- The circumstances of the 19 Undetermined deaths reviewed are listed in Table 19. Two deaths were classified as SUDI, however, the child was older than one year.
- The medical cause of death was undetermined/unknown in five (26%) deaths. However, the medical cause of death was known in the remaining 14 deaths and included the effects of smoke inhalation, respiratory failure, deceleration injuries, hypoxic encephalopathy and asphyxia.
- Four children had received a diagnosis of a medical condition or disorder, and three children had a recent medical event.

Summary of Undetermined deaths

Almost half of deaths classified as Undetermined were further classified as SUDI and are discussed in the following section. Furthermore, almost one-third of Undetermined deaths are cases in which an investigation is still in progress by the BCCS. It is not unusual for a preliminary classification of Undetermined to be placed on a file before the case is concluded (i.e., the investigation is completed). Classification of the death as Undetermined may change following investigation into the death. While the classification of death was classified as Undetermined, the circumstance and/or the underlying medical cause of death may be known.

BCCS Region	Number (%) of Undetermined Deaths Reviewed
Fraser	9 (45%)
Interior	5 (26%)
Vancouver Metro	3 (16%)
Northern	3 (16%)
Island	2 (10%)
TOTAL	19

Table 18 — Number and percentage of Undetermined deaths reviewed by BCCS region

Circumstances of Death	Number (%) of Undetermined Deaths Reviewed
Undetermined	7 (37%)
Cases not concluded[2]	6 (31%)
Sudden Unexpected Death in Infancy	2 (10%)
Fire	1 (5%)
Medical	1 (5%)
Ligature hanging	1 (5%)
Other injuries	1 (5%)
TOTAL	19

Table 19 — Number and percentage of Undetermined deaths reviewed by circumstance of death

[1] The classification of a death as Undetermined does not represent a lack of findings but rather a careful consideration of all the available evidence. While the classification of death may be Undetermined, the cause of death is often identified.
[2] The death is still under investigation by a Coroner.

11| Sudden Unexpected Death in Infancy (SUDI)

Sudden Unexpected Deaths in Infancy (SUDI) includes the deaths of children one year or younger. Not all SUDI cases are due to Sudden Infant Death Syndrome (SIDS). Due to improvements in the understanding of SUDI, the BCCS currently classifies SUDI according to a policy established in November 2004 (*see Appendix 3 for description*). In many cases, the cause of a SUDI can not be determined through autopsy as there are no anatomical findings. This reflects the nature of infant deaths and the limits of medical understanding of infant developmental biology. For example, genetics, environmental contributions, immune functioning or their interactions have been identified as possible causes of SUDI.[44,45,46]

Classification and Cause of Death	Number (%) of SUDI Cases Reviewed
Accident (2)	
Asphyxia	2 (5%)
Undetermined (18)	
Undetermined/No anatomical cause of death	8 (20%)
SUDI	5 (12%)
SIDS	2 (5%)
Cardiac and/or respiratory arrest	2 (5%)
Asphyxia	1 (2%)
Natural (20)	
SIDS	19 (47%)
Probable respiratory arrest	1 (2%)
Thrombosed Blalok-Taussig shunt	1 (2%)
TOTAL	**41**

Table 20 — Number and percentage of SUDI cases reviewed by classification and medical cause of death

BCCS Region	Number (%) of SUDI Cases Reviewed
Fraser	16 (40%)
Island	7 (18%)
Interior	7 (17%)
Northern	7 (15%)
Vancouver Metro	4 (10%)
TOTAL	**41**

Table 21 — Number and percentage of SUDI cases reviewed by BCCS region

The classification of death and cause of death for 41 infants are listed in Table 20.

- Almost all children (39 out of 41) died while being left to sleep and unattended.
- Table 20 illustrates that there are several possible causes of death in cases of SUDI. Important to note is that even in cases where the cause of death has not been definitively identified, risk factors may be present, as will be discussed later in this section.

> The Sudden unexpected deaths of 27 male and 14 female neonates and infants were reviewed.

- The deaths of nine (22%) neonates (average age: 17 days) and 32 (78%) infants (average age: 95 days) were reviewed.
- SUDI cases included the deaths of 11 (27%) Aboriginal children, seven males and four females.
- The highest number of SUDI cases occurred in the Fraser region (16 or 40%), with less than half that number of deaths occurring in the other regions (Table 21).
- The average age of Aboriginal children (124 days) is approximately two months older than for non-Aboriginal children (60.5 days). The peak in incidence of SIDS is between one and four months[47] suggesting that Aboriginal children may be at risk for SUDI later in infancy or for a longer period than non-Aboriginal children. This trend will be monitored by the CDR Unit and further examined.
- A total of 16 children had involvement with the MCFD. Fourteen had received services and two were in the care of the MCFD.
- Table 22 lists the sleep location of the child when they were found and indicates that 27 (67%) infants were sleeping in an inappropriate sleep environment as defined by today's standards.
- Table 23 lists the initial sleep position and indicates that one quarter of children were

[44] Prandota J (2004). Possible pathomechanisms of sudden infant death syndrome: key role of chronic hypoxia, infection/inflammation states, cytokine irregularities, and metabolic trauma in genetically predisposed infants. American Journal of Therapeutics 11:517-546.
[45] Guntheroth WG, Spiers PS (2002). The triple risk hypotheses in sudden infant death syndrome. Pediatrics 110:e64.
[46] Opdal SH, Rognum TO (2004). The sudden infant death syndrome gene: does it exist? Pediatrics. 114:e506-12.
[47] Leach CE et al. (1999). Epidemiology of SIDS and explained sudden infant deaths. CESDI SUDI Research Group. Pediatrics 104:e43.

Location Found	Number (%) of SUDI Cases Reviewed
Adult bed	14 (35%)
Crib	12 (30%)
Couch	8 (20%)
Mother's arms	3 (7%)
Floor	2 (5%)
Data not available	2 (2%)
TOTAL	41

Table 22 — Number and percentage of SUDI cases reviewed by location found

Sleep Position	Initial Sleep Position: Number (%) of SUDI Cases Reviewed	Position Found: Number (%) of SUDI Cases Reviewed
Stomach	12 (30%)	18 (45%)
Side	11 (27%)	7 (17%)
Back	10 (25%)	10 (25%)
Data not available/not applicable	8 (17%)	6 (12%)
TOTAL	41	

Table 23 — Number and percentage of SUDI cases reviewed by initial sleep position and position in which the infant was found

Possible Risk Factor*	Number (%) of SUDI Cases Reviewed
Inappropriate sleep surface (other than crib)	27 (65%)
Prenatal exposure to tobacco drugs** or alcohol	22 (55%)
Recent medical event	21 (50%)
Soft bedding present	17 (42%)
Second hand smoke	14 (35%)
Superfluous items found in bed	7 (15%)
Family history of SIDS or other child deaths	6 (15%)
Premature	5 (12%)
Overheating possible	4 (10%)

Table 24 — Number and percent of SUDI cases reviewed by possible risk factor

properly positioned for sleep (i.e., put to sleep on their backs). This table also indicates that some infants rolled onto their stomachs during sleep, as more infants were found on their stomachs than were originally placed. This suggests that parents should check on their infants during sleep to ensure an appropriate sleeping position is maintained.

- For six (15%) infants, the child was sleeping in a new sleep environment (i.e., not the child's usual sleeping environment). This may represent an unsafe sleeping practice, unless the new environment is an approved sleep environment.
- For six (15%) children, it was reported that the child's airway was obstructed or that there was an object, typically a blanket, covering the nose and/or mouth of the infant.
- In 14 (35%) deaths a fluid (blood, blood-tinged fluid or vomit) was found in the nose and/or mouth of the infant. This finding is routinely recorded as it is a consistent clinical marker in sudden infant deaths.
- Several possible risk factors, in addition to those described above are listed in Table 24.
  - In 22 (55%) deaths, the child had been bed-sharing (co-sleeping), an unsafe sleeping practice, with an adult or other children. Reflecting this high incidence of co-sleeping, overlay of the child was reported as a possibility in 17 (42%) of deaths.
  - Table 24 also indicates a high percentage of prenatal exposure to drugs. Multi-drug use exposure during prenatal development was frequent as 11 of 22 children were exposed to more than one drug. Tobacco was the most frequently used prenatal drug (18 or 45%).

  Risk factors are being routinely monitored by the BCCS CDR Unit for future analysis within a larger data set of child deaths and will be reported regularly.
- The average gestational length of children who died due to SUDI was 38.5 weeks with an average birth weight of 3392.5 grams for females and 3141.2 for males. The average

*Note that more than one risk factor may be present for a death. Therefore, percentage total is greater than 100%.
**A drug is defined as an illicit substance such as cocaine, marijuana or heroin.

birth weight for full-term infants in B.C. is 3552 grams for male and 3417 grams for female infants[50]. Therefore, while children who died due to SUDI were not in general premature (only five were premature) the average birth weight of these children was lower than the provincial average. This finding is consistent with other reports that low birth weights are known risk factors for SUDI.[51,52]

Summary evaluation of Sudden Unexpected Deaths in Infancy (SUDI)

SIDS was the cause of death in over half of SUDI cases. The classification of SUDI by the BCCS has changed since the deaths reviewed in this report occurred and is clarified in Appendix 3 of this report. Therefore, findings reported in this section may no longer be relevant as the accepted criteria for classification of SUDI cases has changed since these deaths occurred. Cases reported as SIDS have and will continue to decline as a result.

The underlying cause of SIDS is not fully understood, although risk factors for SIDS are well known. One significant risk factor identified among the deaths reviewed in this report was prone sleeping. In almost half of deaths, the infant was found in the prone position. While the exact mechanism leading to SIDS is unknown, it is suggested that this sleep position may put pressure on a child's jaw resulting in a constricted airway and breathing. It has also been suggested that this sleep position can result in the infant re-breathing exhaled air, with a higher content of carbon dioxide, which could contribute to SIDS[53].

A second significant risk factor that was identified among the deaths reviewed was co-sleeping, which occurred in over half of all cases. This unsafe sleeping practice can result in overlay and asphyxiation of the child. If overlay is conclusively identified as resulting in asphyxiation, then the death is classified as Accidental. This risk had been identified by the Children's Commission and information regarding this risk released to the public in September 2001. In review of 32 infant deaths (none of which were among the 951 deaths discussed in this report), the Commission identified a significant number of deaths in which the infant had been co-sleeping with an adult at the time of death[54].

A third significant risk factor that was identified was prenatal drug exposure. A significant number of children had prenatal exposure to nicotine, cocaine, alcohol or other drugs. Prenatal exposure to numerous drugs has been associated with an increased incidence of SIDS.[55,56]

In the BCCS CDR Unit Annual Report (2005)[57] there were significantly less unsafe sleeping practices and maternal drug use in comparison to what is presented in this report. Over the last five to eight years there has been

[50] Kierans WJ et al. (2006). New birth weight and gestational age charts for the British Columbia population. B.C. Medical Journal 48:28-32.
[51] Blair PS et al. and the CESDI SUDI Research Group (2006). Sudden infant death syndrome and sleeping position in pre-term and low birth weight infants: an opportunity for targeted intervention. Archives of Disease in Childhood 91:101-106.
[52] Smith GCS, White IR (2006). Predicting the risk for sudden infant death syndrome from obstetric characteristics: a retrospective cohort study of 505,011 live births. Pediatrics 117:60-66.
[53] www.kidshealth.org
[54] "Napping with baby can be risky: Pallan" Children's Commission news release. September 19, 2001.
[55] DiFranza et al. (2004). Prenatal and postnatal environmental tobacco smoke exposure and children's health. Pediatrics 113:1007-1015.
[56] Ostrea at al. (1997). Mortality within the first 2 years in infants exposed to cocaine, opiate, or cannabinoid during gestation. Pediatrics 100:79-83.
[57] BCCS Child Death Review Report (2005).

significant improvements in SUDI investigation, classification of SUDI and identification of specific factors contributing to SUDI. Combined, this has led to a significant decrease in the findings of SIDS. This also suggests caution should be used in extrapolating the results of this review as factors contributing to child deaths. Importantly, SIDS/SUDI is still a leading cause of death in infancy and suggests the need for increased public awareness of less well known risk factors, or the multiplicative effects of risk factors.

There were more male SUDI cases than female reviewed. It is hypothesized that this might be due to a gene located on the X chromosome[30]. This gene is hypothesized to protect the brain from conditions of oxygen deprivation and may therefore confer an advantage to female infants (females have two X chromosomes).

One quarter of SUDI cases were of Aboriginal children. Furthermore, the average age of Aboriginal infants was almost two months older than for non-Aboriginal infants at 119 days (~ four months). The peak incidence of SIDS/SUDI occurs between one and four months. This could indicate that Aboriginal children face an extended risk period of sudden infant death. Factors affecting Aboriginal infant mortality in B.C. were recently identified[31]. Researchers examined maternal and pregnancy characteristics among Aboriginal and non-Aboriginal women in rural and urban areas of British Columbia from 1981 to 2001. There was higher infant mortality due to SIDS, infection, and external causes of death among both urban and rural Aboriginal infants in comparison to non-Aboriginal infants. Researchers in Australia have also reported a higher incidence of SIDS/SUDI among Aboriginal infants[32]. High rates of smoking among or the lack of awareness of risk factors of SIDS among Aboriginal parents may negatively contribute to the incidence of SIDS. However, the differences between Aboriginal and non-Aboriginal infant deaths highlight the importance of examining ethnic differences in and the delivery or use of prenatal and post-natal care sudden infant deaths.

[30] Mage DT, Donner M. (2004). The X-linkage hypotheses for SIDS and the male excess in infant mortality. Medical Hypotheses 62:564-567.
[31] Luo Z. C. et al. (2004). Infant mortality among First Nations versus non-First nations in British Columbia: temporal trends in rural versus urban areas, 1981-2000. International Journal of Epidemiology 33:1252-1259.
[32] Freemantle et al. (2006). Sudden infant death syndrome and unascertainable deaths: Trends and disparities among Aboriginal and non-Aboriginal infants born in Western Australia from 1980 to 2001 inclusive. Journal of Pediatrics and Child Health 42:445-451.

12| Non-Coroner Cases and Natural-Expected Deaths

The deaths of nine female and seven male children, which were classified as Non-Coroner cases, were reviewed.

The deaths of 149 male and 116 female children, classified as Natural-Expected deaths, were reviewed.

Non-Coroner Cases

In addition to the 455 Coroner cases reviewed in the above sections, an additional 16 cases reviewed were concluded to be Non-Coroner Cases (NCC). Non-Coroner Cases are deaths that are initially reported to the Coroners Service, but after a preliminary investigation are determined not to meet the criteria of Section 9 of the British Columbia's Coroners Act and are not investigated any further as the cause of death is due to a natural disease process; therefore, no Judgement of Inquiry is done.

- NCC deaths included one (7%) neonate, four (20%) infants, ten (67%) youths and one (7%) teenager.
- All children were 15 years or younger.
- The leading medical causes of death were respiratory-related (six or 40%) or neurological (four or 27%) children.
- In ten (67%) deaths, the child had received services from the MCFD[1].
- Two (13%) of the children were in the care of the MCFD.

Natural-Expected deaths

The Natural-Expected deaths of 265 children were reviewed. The Children's Commission had incorrectly listed an additional 31 Natural-Expected deaths that were identified by the CDR Unit as Coroner cases (i.e., Natural-Unexpected, Homicide, Accident, Suicide, or Undetermined) and had been investigated by the BCCS. In addition to the 31 Coroner cases, one death was listed as Natural-Expected but upon review by the CDR Unit it was identified that the child had died due to a previous non-accidental injury. This case had not been reported to the BCCS. It had been recognized by the Commission's investigator that the death was due to an inflicted traumatic injury, but the case had not been reported or referred to a Coroner. The BCCS has since begun an investigation of this death. Since the closing of the Children's Commission, the BCCS has developed a memorandum-of-understanding with the B.C. Vital Statistics Agency so that the BCCS CDR Unit receives notification of all Natural-Expected deaths not reported to a Coroner. This agreement will ensure that any potential misclassification of death as Natural-

BCCS Region	Number (%) of Non-Coroner Cases Reviewed
Island	6 (40%)
Vancouver Metro	5 (33%)
Fraser	3 (13%)
North	1 (7%)
Interior	1 (7%)
TOTAL	16

Table 25 — Number and percentage of Non-Coroner Cases reviewed by BCCS region

Age Group	Number (%) of Natural-Expected Deaths Reviewed
Neonate	126 (47%)
Youth	84 (32%)
Teenager	29 (11%)
Infant	26 (10%)
TOTAL	265

Table 26 — Number and percentage of Natural-Expected deaths by age group

BCCS Region	Number (%) of Natural-Expected Deaths Reviewed
Vancouver Metro	151 (57%)
Fraser	50 (19%)
Island	35 (13%)
North	16 (6%)
Interior	11 (4%)
Out-of-province	2 (<1%)
TOTAL	265

Table 27 — Number and percentage of Natural-Expected deaths by BCCS region

[1] The high number of NCC cases with MCFD involvement may be due to the longer time MCFD files were held open at the Commission as they waited for the MCFD internal inquiry results before completing their own. It is also consistent with MCFD providing services to families where the child suffers a disabling natural disease process and there are no child protection issues.

Expected is identified and investigated as soon as possible by the CDR Unit.

- The average age of the 265 children who died due to Natural-Expected causes was 4.1 years.
- Eight (3%) of the children were Aboriginal.
- 84 (32%) children had received services from the MCFD.
- Eight (3%) children were in the care of the MCFD.
- Almost half of all children were neonates (Table 26). Furthermore, over half (74 or 58%) of all neonates were one day of age or younger.
- Natural-Expected deaths reviewed included seven pairs of twins, four individual children from a twin birth, and one child from a triplet birth.
- Over half (151 deaths or 57%) of Natural-Expected deaths occurred in the Vancouver Metro region, of which 129 (49%) deaths occurred in the city of Vancouver. This high percentage is likely attributable to travel from other regions to Vancouver for specialized pediatric medical care at B.C. Children's and Women's Hospital.
- 61 (23%) children were premature and died due to medical causes related to their prematurity.
- Other medical causes of death included congenital malformations (e.g., Down Syndrome), malignancies or infection.

Summary evaluation of Non-Coroner Cases and Natural-Expected deaths

In total, 281 cases were Natural-Expected deaths, 16 of those having been reported to the BCCS. Therefore, out of the 736 deaths reviewed in this report, almost 40 per cent were Natural-Expected deaths of children who were under the care of a physician at the time of death.

Over half of Natural-Expected deaths were of neonates and infants indicating that this is an especially vulnerable time in childhood and in part reflects a high incidence of perinatal complications and congenital syndromes and malformation which the BCCS and CDR Unit will monitor aggressively.

13| Children Who Had Received Services From or Were in the Care Of MCFD

The deaths of 112 (51%) male and 108 (49%) female children that had been in the care of or received services from the MCFD were reviewed.

Out of the 736 child deaths reviewed, the MCFD had been involved with 220 children[1].

- 196 children had received services from the MCFD.
- 24 children were in the care of the MCFD at the time of their death.

The deaths of the children reported in this section are also reported by classification of death in the preceding sections.

- 196 (89%) children (101 male and 95 female children) had received services from the MCFD, accounting for 27% of the 736 deaths.
  - 95 (48%) children who had received services from the MCFD had received Community Living Services and were not in need of child protection services[2].
  - 77 (39%) children who had received Community Living Services died a Natural-Expected death, including Non-Coroner Cases.
  - Five children who had received Community Living Services were Aboriginal.
- 24 (11%) children (13 female and 11 male) were in the care of the MCFD, accounting for .03% of the 736 deaths.
  - 13 deaths of the children in care were Coroner cases and included five Undetermined, four Suicide, two Natural-Unexpected, and two Homicide deaths. The remaining 11 were Natural-Expected deaths.
  - Four children in care were receiving Community Living Services and were not in need of child protection services.
- Five deaths out of the 220 children who had MCFD involvement are still under investigation by the BCCS. This includes four Undetermined deaths and one Homicide death, involving two children who were in the care of and three children who had received services from the MCFD.
- The average age of children with whom there had been MCFD involvement was 8.5 years for the 220 deaths reviewed here.
- 43 (19%) Aboriginal children had either received services (31) from or were in the care (12) of the MCFD at the time of their death.
- Table 28 indicates that 104 (48%) of these cases were Natural-Expected deaths or NCCs. 115 cases (52%) were Coroner cases.

Classification of Death	Number (%) of Deaths Reviewed	Number of children who had received services from MCFD	Number of children who were in the care of MCFD
Natural-Expected	92 (42%)	84	8
Accident	39 (18%)	39	0
Natural-Unexpected	26 (12%)	24	2
Suicide	19 (9%)	15	4
Undetermined	17 (8%)	12	5
Homicide	14 (6%)	12	2
Non-Coroner Case	12 (5%)	10	2
Other[3]	1 (<1%)	0	1
TOTAL	**220**	**196**	**24**

Table 28 — Number and percent of cases reviewed by classification of death for children in the care of or receiving services from the MCFD

[1] Out of the total 951 deaths transferred from the Children's Commission, there were 230 children who had received services from the MCFD and 38 had been in the care of the MCFD at the time of their death.

[2] While there is occasionally some children who receive both CLS and child protection services, this analysis includes children who received CLS only.

[3] The Suicide death of a B.C. teenager while out-of-province was reported to BCCS through B.C. Vital Statistics and was not investigated by the BCCS.

- More than half (120 or 55%) of the deaths of children who had received services from or were in the care of the MCFD occurred in either the Fraser or Vancouver Metro regions (Table 29). This may be in part due to the fact that families with a child receiving Community Living Services sometimes relocate to the Lower Mainland to receive better access to medical services.
- 80% of children who had received services from or were in the care of the MCFD were either youth (105 or 48%) or teenagers (72 or 33%). Thirty-three (15%) infants and ten (4%) neonates were among the children who had involvement with the MCFD.
- 16 out of 40 infants who died due to SUDI had received services (14) from the MCFD or were in the care (two) of the MCFD.
- Among children who were in the care of the MCFD or who had received services from the MCFD and died due to SUDI, 69% (11 out of 16 children) had siblings, while only 33% (eight out of 24) of children with no MCFD involvement had siblings. Researchers have identified a tendency for increasing occurrence of SIDS with increasing family size, which is explained in part by a reduced socio-economic status as family size increases[55].

Coroner cases

- Out of the 220 deaths of children in which there was MCFD involvement, there were 115 Coroner cases of which:
  - 102 (89%) children had received services from the MCFD
  - 13 (11%) were in the care of the MCFD.
- The deaths of 59 female and 56 male children were Coroner cases in which there was involvement of the MCFD.
- 51 (46%) children were teenagers, 39 (32%) were youth, 24 (21%) were infants and one (1%) was a neonate.
- In 34 Coroner cases with MCFD involvement, the child was Aboriginal, indicating that 81% (34 out of 42) of Aboriginal children who had received services from or who were in the care of the MCFD died suddenly and unexpectedly.
- Approximately an equal number of female and male children died due to Accidents.
  - 19 male and 20 female children, all of whom had received services from the MCFD died due to Accident. In comparison, among non-Aboriginal there were a higher number of male children in comparison to female children who died due to Accidental causes. This indicates that there is a greater risk of Accidental death among female Aboriginal children.

BCCS Region	Number (%) of Deaths Reviewed
Fraser	62 (28%)
Vancouver Metro	58 (26%)
Island	45 (20%)
Interior	31 (14%)
Northern	22 (10%)
Out-of-province	2 (<1%)
TOTAL	220

Table 29 — Number and percentage of deaths reviewed by BCCS region for all classifications of death, including Natural-Expected as well as Non-Coroner Cases

Summary evaluation of deaths in which there was MCFD involvement prior to death

Almost one-third of children whose deaths were reviewed in this report had either received services from the MCFD prior to their death or were in the care of the MCFD at the time of their death. Almost half of the children who had received services were not in need of child protection services, but rather had

[55] Spiers PS et al. (1993). Birth order and risk of sudden infant death syndrome: is the true relationship negative? Journal of Paediatric Child Health 29:215-218.

received Community Living Services. More specifically, over 80 per cent of children who had received Community Living Services died due to Natural-Expected causes indicating that their involvement with the MCFD was for support services for a medical condition or illness. It is important to note that each year in BC there is approximately 31,000 reports that are received and investigated by MCFD staff. Therefore, the number of deaths of children who had received services or were in care is relatively few in comparison to the total number of children with whom the MCFD is involved.

Almost one-fifth of children who had received services or who were in the care of the MCFD were Aboriginal. Therefore, out of the total 83 Aboriginal child deaths reviewed in this report, half (43 out of 83) had involvement with the MCFD prior to or at the time of their death. A 2001 report by the B.C. Public Health Officer[44] stated that one-third of children in care are Aboriginal further emphasizing that one of the biggest issues the MCFD faces is the disproportionate number of Aboriginal children and families needing their services.

Age Group	Number (%) of MCFD reviews
Teenager	30 (42%)
Youth	25 (35%)
Infant	16 (22%)
Neonate	1 (1%)
TOTAL	72

Table 30 — Number and percentage of deaths by age group

Director's Case Reviews and Deputy Director's Reviews

The deaths of 40 (56%) male and 32 (44%) female children received a DCR or DDR.

MCFD practice standards require that the Director of Child Welfare be notified immediately regarding the death of a child in care or a child who has received services in the previous 12 months. The circumstances of the death are reviewed and the Director may decide a formal case review is required. There are two types of formal case reviews — a Director's Case Review and a Deputy Director's Review. A Director's Case Review (DCR) is a comprehensive review that involves the examination of case files as well as interviews of relevant staff, caregivers and service providers. The decision to conduct a DCR is based on the severity of the occurrence, the potential link between case practice and the outcome and the level of response required for public accountability. A Deputy Director's Review (DDR) is more limited in scope and usually consists of a file review with a focus on the last five years of MCFD involvement. Both types of reviews may result in recommendations developed to address any practice and or service issues identified. These recommendations are tracked and monitored for implementation by the Director. This section contains a summary of the MCFD reviews conducted following the deaths of 72 children who had received services from the MCFD or who were in the care of the MCFD.

- MCFD reviews were conducted following the deaths of 57 children who had received services. Nine were DCR while 48 were DDR.
- MCFD reviews were conducted following the deaths of 15 children who were in care at the time of death. Three were DCR while 12 were DDR.
- 12 DCR and 60 DDR MCFD reviews were conducted.
- Out of the 72 MCFD reviews that were conducted, 62 were Coroner Cases (i.e., Sudden and Unexpected deaths).
- An MCFD review was conducted into the deaths of 22 (30%) Aboriginal children.
- Youth or teenagers comprised 56 (74%) of the child deaths that received an MCFD review (Table 30).
- Accidental deaths received the highest percentage of MCFD reviews (18 or 25%),

[44] Health Status of Children and Youth in Care in British Columbia. What do the mortality data show? 2001. Provincial Health Officer.

which was slightly less than the percentage of overall Accidental deaths (31%) (Table 31).

- Suicide deaths accounted for 8% of all deaths, but received a slightly higher percentage (15 or 21%) of reviews.
- Natural-Expected and Natural-Unexpected accounted for 49% of all deaths, but received a lower percentage (15 or 22%) of MCFD reviews. This lower percentage is due to policy changes implemented by the MCFD in 1999 that Natural deaths (both expected and unexpected) were not reviewed unless specific practice issues were identified that required further review.
- Table 32 lists the BCCS region of death for the children who received MCFD reviews. Over a third of the children were from the Fraser region.
- A result of the MCFD review process is that recommendations are formulated to address concerns or complaints regarding the role of the MCFD in providing services to children. Following review of DCR and DDR reports the CDR Unit identified several common themes in the recommendations listed in these reviews as listed in Table 33.
- Of the reports examined, the most frequent example recommendations are listed in Table 33.

Classification of Death	Number (%) of Reviews
Accident	18 (25%)
Suicide	15 (21%)
Undetermined	13 (18%)
Homicide	11 (15%)
Natural	9 (12%)
Natural-Expected	3 (4%)
Non-Coroner Case	3 (4%)
TOTAL	72

Table 31 — Number and percentage of deaths reviewed by classification of death

BCCS Region	Number (%) of MCFD Reviews
Fraser	25 (35%)
Island	18 (25%)
Interior	12 (17%)
Vancouver Metro	8 (11%)
Northern	8 (11%)
Out-of-province	1 (1%)
TOTAL	72

Table 32 — Number and percentage of deaths reviewed by BCCS region

	Example Recommendations
Training	• Ensure that staff have completed Advanced Risk Assessment training • Ensure staff receive Integrated Case Management training
Sharing of information	• Ensure that the report is shared with the staff involved • Share the report with various agencies for discussion of relevant topics
Policies and Practices	• Ensure that only delegated workers complete Comprehensive Risk Assessments • Undertake a Comprehensive Risk Management Assessment of child's sibling(s) • Ensure that the intake number specified is recorded on the Social Work System-Management Information System • Hold practice forum with various staff members to examine how practices can be strengthened

Table 33 — Types of recommendations identified in DCR and DDR reports of child deaths reviewed for this report

Summary evaluation of Director's Case Reviews and Deputy Director's Reviews

While specific details regarding these reviews cannot be presented here due to privacy concerns, there were several repetitive recommendations that commonly resulted from these reviews that are included in the above section. Review of these recommendations indicates that while the MCFD has policies in place regarding administration of their services, consistent implementation of these policies may present a challenge to the MCFD in some circumstances. Furthermore, these reviews were most often conducted following sudden and unexpected deaths, i.e. Coroner Cases.

In addition, a high percentage of reviews were of Aboriginal children, indicating that specific concerns regarding MCFD involvement may have arisen regarding these children or that these cases are ones that the MCFD recognise require a certain level of response for public accountability as Aboriginal deaths represent a disproportionate number of overall cases.

Part III

14| Recommendations
15| Conclusions

14| Recommendations

Recommendations arising from the Coroner's investigation

Recommendations were made following the deaths of 41 male and 26 female children.

- A Coroner may make recommendations following their investigation if it is determined that a death could have been prevented if the recommended measures had been in place at the time of the death. Responses to these recommendations are tracked by the BCCS and form part of the public record. This is an important process through which the Coroners Service works to prevent future child deaths.
- Cases that receive recommendations are forwarded to the Chief Coroner. Before release, the Chief Coroner approves the recommendations and confirms a thorough and complete investigation has been conducted.
- Recommendations often suggest improvements of policies or procedures, development of education programs or additions to existing strategies. A Coroner may also make the recommendation that an agency is provided with the Judgment of Inquiry (the findings of the Coroner's investigation) for informational purposes for their review of the particular circumstances that resulted in a child's death.
- Of the 455 Coroner Cases in this review, recommendations were made following 63 deaths by the investigating Coroner and four Juries at Inquest for a total of 67 cases with recommendations.
- A total of 230 recommendations were made; an average of 3.4 recommendations per death.
- Almost 80% of recommendations were regarding the deaths of youth and teenagers (42% and 36% respectively). The remaining recommendations were approximately evenly divided among neonates and infants.
- 17 (25%) children had received services from the MCFD, while three (4%) had been under the care of the MCFD at the time of their death.
- Table 34 indicates that there were a high percentage of recommendations following Accidental deaths. As Accidental deaths are preventable deaths, recommendations following these deaths can make a significant impact in preventing future deaths.
- Table 36 provides examples of the types of recommendations that were made following the Coroner's investigations of some of the 455 Coroner cases that comprised the "955 Transition Files", and the responses received. Recommendations are directed toward one or more agencies and a response requested. Upon receiving responses from agencies, the BCCS categorizes and records the response as one of the following: positive, negative, no response, or acknowledged (i.e., by the agency).

Classification of Death	Number (%) of Deaths
Accident	37 (55%)
Natural	15 (22%)
Suicide	8 (12%)
Homicide	6 (9%)
Undetermined	1 (1%)
TOTAL	67

Table 34 — Number and percentage of cases with one or more recommendations made by classification of death

BCCS Region	Number (%) of Deaths
Island	19 (28%)
Interior	17 (25%)
Fraser	15 (22%)
Northern	9 (13%)
Vancouver Metro	7 (10%)
TOTAL	67

Table 35 — Number and percentage of cases with one or more recommendations by region

Table 36 (continued from p. 47) — The details of death, the agencies involved and the outcome/response to formal recommendations made by the investigating Coroner following Accidental, Homicide, Natural-Unexpected and Suicide deaths.

Details of Death	Recommendation	Agency Directed To	Outcome/Response
Accidental			
Case 1 Drowning	1. That additional cautionary signs be placed around beach and swimming areas at Riverside Park to warn patrons of potential swimming hazards and swift river current.	• City of Kamloops	1. No response[1]
Case 2 Poisoning and/or drug intoxication	1. That this case is used for education of the value of communication between B.C. Ambulance dispatchers regarding similar incidents. 2. That this case is used as an example to assist in clear communication between police, ambulance personnel and dispatchers. 3. That the B.C. Drug and Poison Information Centre should promote public awareness of the dangers of drinking unknown substances.	• BC Ambulance Service • RCMP-"E" Division • BC Drug and Poison Information Centre	1-2. Positive – Training among emergency medical dispatchers for BC in the importance of clear communication between dispatchers and other agencies. RCMP "E" Division training will utilize same information. 3. No response.
Case 3 Pedestrian in motor vehicle incident	1. That there is a review of this case to determine if the use of vehicles with safety defects can be prevented.	• ICBC • RCMP "E" Division Contract Policing • Fort St. James RCMP	1. Positive – Equipment and related safety regulations currently under review. The Coroner's judgment will be used to help guide any regulatory changes that may result.
Case 4 Multiple child fatalities – motor vehicle incident	1. That several revisions be made to the Motor Vehicle Act (revisions omitted for brevity). 2. Any driver of a vehicle in addition to parents or guardians, with a child under the age of eight shall ensure the child is restrained in accordance with the Transport Canada Standards (as per RSSR) and manufacturer's instructions.	• Minister of Finance and Minister Responsible for ICBC • ICBC	1. No response[2] 2. Positive response from ICBC regarding revisions to Motor Vehicle Act.
Case 5 Motor vehicle incident	1. That regulations are amended to limit the number of passengers that can be carried by a novice driver. 2. That ICBC, road safety and local police collaborate when involved in road design. 3. That funding is provided for recommendation 2.	• ICBC • Engineering department Abbotsford City Hall • Abbotsford City Council	1. Acknowledged under review. 2. Positive. 3. Positive.
Case 6 Multiple child fatalities-house fire	1. First Nations Band Councillors (FNBC) educate members on proper use and storage of propane tanks on residential property. 2. NBC to consider development of a sprinkler system when pressurized water is available, but no fire protection present. 3. FNBC to encourage band membe[illegible] understand role of the coroner and its functions related to autopsies needed to fulfill coroner's responsibility to the deceased, to ensure investigations are not compromised, and to establish precise identification of deceased.	• Lower Similkameen Indian Band • Penticton Indian Band • Union of Indian Chiefs	1 – 3. No response.
Homicide			
Case 1 Abuse related	1. That each regional health board be contacted and advised of the urgency in completing a discharge protocol for high risk infants. 2. That staff be aware of discharge planning process for high risk infants from their own and neighbouring regions.	• Minister of Health • Minister of Children and Families	1-2. Positive. All health boards forwarded a copy of recommendations. Initial response received indicated that recommendations were under review and would be followed-up in 60 days.

[1] A response was requested by this review team and received in early October 2006 that the City of Kamloops made significant changes since this incident as per the Coroner's recommendations.

[2] The response was deferred to ICBC to respond although no official notification from the Minister's office was received to this effect.

Details of Death	Recommendation	Agency Directed To	Outcome/Response
Natural-Unexpected			
Case 1 Sepsis infection	Seven recommendations were made regarding the hospital's policy and procedures. Including review of: 1. Procedures for reporting laboratory results 2. Forms utilized in infant transport to improve transfer of information to hospital staff	• South Fraser Health region • Langley Memorial Hospital • BC Health Care Risk Management Society • BC Ambulance Service • College of Physicians & Surgeons of BC	Positive response from Fraser Health to all coroner recommendations incorporating practice changes. There was no response to the majority of the recommendations but one positive response to one of the recommendations.
Case 2 Cardiac arrhythmia due to viral myocarditis	Six recommendations were made regarding nursing education and training, and protocols followed by nursing staff.	• Emergency Program, Surrey Memorial Hospital	Positive. Recommendations were addressed at the multidisciplinary Emergency Program meeting. Changes were made to formal triage assessment, and paediatric educational workshops were implemented.
Case 3 Meningitis while at camp	1. That a cell phone and a portable suction unit are purchased to facilitate medical transfers from camp.	• BC Lions Society	Positive. Both items purchased.
Case 4 Infant death due to unrecognised problems in birth process	1. Reliable continuous fetal heart rate monitoring. 2. That staff are updated in interpretation of a fetal heart rate monitor. 3. That the need for an on-call paediatrician on-site is reviewed. 4. That there is a review of abnormal fetal heart rate patterns and subsequent need for paediatric assistance.	• Surrey Memorial Hospital • College of Physicians and surgeons	1 - 3. No response. 4. Positive - College critical of care baby received and matter still under review.
Suicide			
Case 1 Gunshot wound	1. That an intervention program is developed for maladaptive children that involve their families.	• Minister of Education	Positive. Training booklets and workshops for key service and school district personnel to be implemented.
Case 2 Hanging at correctional facility	1. When Code Blue is called 911 should be called without waiting for on scene assessment. 2. All informal head counts include visual verification. 3. Inspect facility and remove any supports available for hangings.	• Correctional Centre for Women • Ministry of Attorney General, Corrections Branch (currently the Ministry of Public Safety and Solicitor General)	1. Negative. On scene assessment before 911 is called is the preferred protocol. 2. Positive. A head count is conducted each time a staff member ends a shift. 3. Positive. Shower head and curtain rods replaced to reduce / eliminate possible hanging devices.
Case 3 Suicide of youth in care	Nine recommendations were made and included that all safe houses: • have approved policy and procedure manuals • guidelines for assessing youth who show self harm behaviours • staff trained in recognizing self harm behaviours • that staff notify caregivers within reasonable time that youth has expressed suicidal ideation	• Ministry for Children and Family Development • Community Care Licensing • National Organization of Child Care Workers (USA)	1-3. Positive - All are fully implemented. 4-5. Positive - Included in policy changes in safe houses but not put directly into contract. 7-8. Positive - Act reviewed with the aim of complying with recommendations. 9. No response.
Case 4 Hanging suicide of Aboriginal child	Chief and Council of Ditidaht Band hire an independent, experienced therapeutic counsellor for community, who is registered in B.C.	• Ditidaht First Nation • Ditidaht Police Service • Malachan Reserve	In 2003, hired resident counsellor to deliver services in Nitinaht Lake, including issues specific to residential school trauma, healing, reconciliation, alcohol and drug abuse, and suicide intervention programs.

- In the process of formulating recommendations, a Coroner will consult the agencies involved in order to collaboratively develop realistic and achievable recommendations and to monitor if any preventive changes occurred following a particular fatal event. This can result in immediate changes to policies and practices that can help prevent future deaths. Examples of prevention strategies developed during consultation that resulted in positive changes without the need for formal recommendations are presented in Table 37.

Details of Death	Agency Directed To	Outcome/Reponse
	Accident	
Drug Intoxication	• BCCS	• Press release issued warning of health risks associated with ecstasy use at raves.
Drowning	• Transportation Safety Board (TSB) • Marine Communications and Traffic Services • Canadian Coast Guard • Tug Boat Company	• Ensure that crafts have working navigational equipment, or if an upgrade is necessary • Several publications and training created to ensure proper knowledge and action is taken regarding navigation safety • Other safety initiatives taken (North American Safety Council formed, policy changes in North American Safety, monthly reporting for each operation)
Drowning	• Family of deceased	• Redesigned cover installed over water cistern in which child had fallen into and drowned
Two separate industrial incidents	• WorkSafe BC (formerly Worker's Compensation Board)	• WCB made several work safety recommendations to prevent further accidents
	Natural	
Prematurity	• BC Children's Hospital	• Toledo scales replaced with digital scales, with regular maintenance checks to ensure proper birth weights are obtained • Policy developed which includes administration of prophylactic heparin with central intravenous line
Natural disease process	• Ministry of Children and Family Development	• Internal review made a number of recommendations to address service delivery concerns (no specific details of what changed as internal reviews are not reported)
	Suicide	
Hanging	• Ministry of Children and Family Development	• Numerous recommendations regarding availability of mental health services at safe houses, including suicide prevention training
Young Child	• Ministry of Children and Family Development	• Although there were no active files on this child, a review was conducted by the MCFD resulting in numerous systemic and practice changes

Table 37 — Details of deaths, the agencies involved, and the outcome/response to informal recommendations that were made during the course of a Coroner's investigation.

Recommendations for change from the CDR Unit at the BCCS

To the Representative for Children and Youth

1. That the Representative convene a Multidisciplinary Team (MDT) following release of this report consisting of representation from police, medical and pediatric specialists, MCFD child protection specialists, specialists in child abuse, and public health, Aboriginal agencies, the B.C. Coroners Service, Superintendent of Motor Vehicles, ICBC, the B.C. Ambulance Service, and the B.C. Injury Research Prevention Unit; so they can formulate action strategies to address the issues identified by this and other child death data and monitor preventable deaths of children in our province. And that the MDT monitors and measures the effectiveness of prevention programs.

   Rationale: Immediate action is required. The findings and analysis in this report and others identify an immediate need for a MDT to start dialogue regarding child mortality prevention and to combine resources for coordinated initiatives. In addition, there is no collective group at present that monitors and measures the effectiveness of prevention programs.

2. That the Representative for Children and Youth report bi-annually regarding the progress of the initiatives and action plans from this MDT.

   Rationale: That the public has current and timely access to the action plans in place to protect the children in B.C.

To the Chief Coroner and Representative of Children and Youth

3. To make available all transition files in which a child had involvement with the MCFD to the Representative for Child and Youth. It is recommended that the Representative not conduct further reviews as these cases have now received four reviews.

   Rationale: It is doubtful much more meaningful information can be gained from further review of these files. We recommend that the BCCS CDR Unit assist the new Representative by sharing information on these cases and in isolating the files that the Representative may require.

4. That the data on critical injury to children is provided to the CDR Unit

   Rationale: Critical child injury data would contribute to the CDR Unit's formulation of prevention strategies and enhance the analysis and research in the prediction of risk factors and trends in child critical injury and death. The CDR Unit is working in collaboration with the B.C. Injury Research Prevention Unit to assess risk factors in children who suffer critical injuries. Currently information on critical injury to children is not available to the BCCS CDR Unit.

To the Government of British Columbia

5. That a precise and expeditious transition plan from the Child and Youth Officer to the Representative for Children and Youth is implemented as recommended by Mr. Hughes as per Section 7.1, Dedicated Transition Team and Staff, in BC Child and Youth Review, 2006.

To the Chief Coroner and Representative of Children and Youth and the Minister of Children and Family Development

6. That it become a priority to establish compatible and interactive data and information-sharing systems between and within governmental agencies involved in child welfare including the Coroners Service CDR Unit.

   Rationale: That a system be designed, developed, and established to link databases of the various ministries and the new Representative. At present there are no compatible systems in order to share data regarding child protection, support services, critical injury and death.

To the First Nations Summit, the Union of B.C. Indian Chiefs, the B.C. Assembly of First Nations, Minister of Education and the Minister of Aboriginal Relations and Reconciliation

7. That the Aboriginal leadership and Aboriginal agencies develop a representative committee that can work cooperatively with representatives from the Office of the Representative for Children and Youth and the CDR Unit to create a plan for the design and implementation of a strategy to address the increased risk of mortality of their children and communities and that they receive the necessary support to achieve success.

8. That education is delivered to the Aboriginal communities through distance education programs that already exist.

   Rationale: Aboriginal youth are best mentored, educated and provided services by others in the Aboriginal community. However, education and training of additional members of the Aboriginal community is required to ensure their placement in child protection agencies and support service providers. In the past year great progress has been achieved in consultation by the different Aboriginal leadership groups. Following this consultation, action is now required.

To the Chief Coroner, Representative for Children and Youth and the Minister of Children and Family Development.

9. That the CDR Unit and MCFD child protection services conduct a joint research project to study the prevalence of children in care raising children who become children in care.

Rationale: There is no research available on the long-term effects of child protection services provided to generations of children. It would be meaningful to review and analyze the data of all children in care through to adulthood and parenthood. This review of 736 child deaths identified a number of young parents with children in care of the Government who themselves had been children in care of the Government.

To the Minister of Children and Family Development

10. That the MCFD examines and develops strategies to improve the supervision and enforcement of MCFD practices and policies in delivery of services to children and families. In addition, the workability and practicality of child welfare policy may need to be re-examined.

    Rationale: The review of deaths of children who had received services from or who were in the care of the MCFD and the Deputy Director Reviews and Director Case Reviews indicated that compliance with policy and practice could be improved. A higher standard of supervision, quality assurance and accountability may be warranted.

11. That families are monitored by MCFD for a minimum of six months to a year following an incident of critical injury or unexpected death of a child in a family if there are other children living with the family.

    Rationale: To support families and prevent further injury or death of children in families at risk.

To the Minister of Aboriginal Relations and Reconciliation.

12. That staff of the Ministry of Aboriginal Relations and Reconciliation meet with representatives of the First Nations Summit, the Union of B.C. Indian Chiefs, the B.C. Assembly of First Nations, the Representative for Children and Youth, the Chief Coroner, the Ministry of Children and Family Development, the Ministry of Health and the 23 identified Aboriginal child welfare agencies to address the specific needs of their communities and to share information and findings from this and previous reports in order to put forward realistic and achievable initiatives to make positive changes in the representation of Aboriginal children who suffer critical injuries or die unexpectedly. That these meetings develop action plans that are reported publicly.

To Health Canada (First Nations and Inuit Health Branch) and the B.C. Minister of Health

13. To examine and report on the delivery of health care to Aboriginal families and communities in B.C. with particular emphasis on prenatal, perinatal and postnatal care to mothers and babies up to one year of age.

    Rationale: This and other reports have documented consistent disparity in infant deaths between Aboriginal and Non-Aboriginal infants. Infants under one year are particularly vulnerable in Aboriginal populations with lower birth weight and lower gestational age suggesting the level of health care to mother and child may be a contributing factor[68].

To. British Columbia Chiefs of Police

14. Enforce the legal requirement for safe fire arm storage in family homes where children reside.

    Rationale: In the cases where children took their own lives or died accidentally from the use of a firearm: the weapons and ammunition had not been stored safely as required by law.

To. The Superintendent of Motor Vehicles, the President CEO of ICBC and Police Services of the Ministry of Public Safety and Solicitor General

15. To review regional differences in youth and teenage critical injury and death rates due to motor vehicle accidents and to consider this data when developing and delivering enforcement and regulatory road safety strategies including driver training, education and awareness programs aimed at these age groups in high risk regions.

    Rationale: This report indicates the need for continued review of regional differences in death rates of youth and teenagers due to motor vehicle accidents. This report and the Child Death Review Report 2005 indicate fluctuating regional differences in motor vehicle accidental deaths. These reports also indicate that passengers and teenage males are most at risk.

    Recent study by ICBC has shown that no evidence was obtained in their revue of the Graduated Licence program to support the continued provision of a time incentive to new drivers for completing an ICBC-approved driver education course. During the first six months of Novice (unsupervised) driving, the odds of a driver being involved in a crash were estimated to be 27 per cent higher for those who completed an approved course than for those who reported taking no driver education. The shorter time spent in the learner stage by drivers who completed the course was one of the factors associated with this outcome."[70]

[68] BCCS Child Death Review Annual Report 2005
[70] www.icbc.com/library/glp_eval.asp

15| Conclusions

No child death in B.C. has been or will be overlooked or ignored. As many as three agencies, (MCFD, BCCS, Police, CYO, etc.), examined some of these cases before the present review. Furthermore, this review has demonstrated the lengths routinely taken in investigation and review of child deaths. Importantly, the findings will be useful in future initiatives aimed at preventing child mortality.

The information gathered from this review is now contained within the BCCS database for future use by the CDR Unit and other agencies or groups. It is through aggregate review and analysis that effective strategies are developed to prevent child deaths. For example, provincial initiatives have begun in response to the findings reported in various reviews over the past year. These initiatives are consistent with the findings of this review, particularly with respect to the disproportionate numbers of Aboriginal children in care and who die prematurely.

Since the CDR Unit began review of the 951 transition files, several important events regarding child death have occurred.

April 2006 – Mr. Ted Hughes, QC, released a report to the Government of B.C. recommending improvements to the child protection system and to the services provided to families and children in B.C.

May 2006 – the Government announced that they will proceed with the recommendations made by Mr. Hughes to introduce legislation to create a new position of Representative for Children and Youth. The Government also committed funds to the BCCS to fund the CDR Unit adequately.

June 19, 2006 – the Minister of Children and Family Development, announced $500,000 to help reconnect Aboriginal children in care with their families and culture, in response to the high percentage of Aboriginal children in northern B.C. that are in the care of the ministry. The funding will be administered by the First People's Cultural Foundation in Victoria.

June 21, 2006 – the BCCS CDR Unit released a report on child deaths in B.C. for the years 2003–2005, as well as child deaths that occurred in 2002, during the transition period from the Children's Commission to the CYO. The CDR Unit report indicated child-related issues requiring urgent attention, especially neonatal care, aboriginal child care, and teenage behaviour in and around motor vehicles. It also highlighted the need to address the use of restraints and complemented the call for new regulations on child restraint use.

June 20, 2006 – the First Nations Summit issued a press release which expressed concern over the statistics on Aboriginal child deaths in the BCCS CDR Unit Child Death Review Report. The Summit supported the recommendation made in the Annual Report that all levels of Government, educators, parents and Aboriginal leaders and communities work together to address the disturbing trends in Aboriginal child death. The First Nations Summit pledged to meet with the Chief Coroner to discuss the report and have since met in July and in September 2006. Information and learning has been shared and taken back to their communities. It is hoped that the First Nations Summit continues to act to reduce the number of Aboriginal child deaths.

Finally, this review of the 951 transition files took nine months to complete and substantial resources. We achieved our mandate to review each of these files. We ensured that the information from this review would be used in our future work. We learned that child death is a serious concern for all people who work with children in this province; and that following any and all child injury or death there are substantial levels of inquiry and/or review to find ways of preventing it happening again.

Glossary

Asphyxia: Occlusion of the airway resulting in lack of oxygen

Cause of death: The immediate medical cause of death (e.g., head injury resulting from a motor vehicle accident, asphyxiation due to hanging).

Children: Overall term to refer to individuals 18 years of age or younger. More specifically classified as neonate (birth to 28 days), infant (29 to 365 days), youth (one to 14 years) or teenager (15 to18 years).

Children who were in the care of the Ministry of Child and Family Development (MCFD): At the time of death, the child was receiving services under the Child, Family and Community Service Act and was in the physical care or custody of the Director under the act.

Children who had received services from MCFD: Children who received services under the Child, Family and Community Service Act in the year before their death.

Circumstances of death: By what means the event led to the death (e.g., Motor Vehicle Accident/Driver/Motorcycle).

Classification of death: As one of the following:

Accident: Death due to unintentional or unexpected injury. It includes death resulting from complications reasonably attributed to the accident.

Homicide: Death due to injury intentionally inflicted by the action of another person. Homicide is a neutral term that does not imply fault or blame.

Natural-Unexpected: Death primarily resulting from a disease of the body and not resulting secondarily from injuries or abnormal environmental factors.

Suicide: Death resulting from self-inflicted injury, with intent to cause death.

Undetermined: Death which, because of insufficient evidence or inability to otherwise determine, cannot reasonably be classified as Natural, Accidental, Suicide or Homicide.

Hypoxicencephalopathy: brain injury resulting from lack of oxygen.

Medical event: Any illness, condition or disease, diagnosis, or medical treatment (including vaccination or medication).

Natural-Expected death: A death reported to the BCCS from the B.C. Vital Statistics Agency of a child who died of Natural and expected causes while under medical care. The family physician verifies the cause of death and completes the medical certificate of death.

Non-Coroner Case: Cases reported to the Coroner that, after an initial investigation, are determined to be Natural deaths consistent with the medical history and circumstances. These cases do not meet the criteria for death reporting outlined in Section 9 of the B.C. Coroners Act.

Non-prescription medication: Over-the-counter medications or medication readily available in a drug or grocery store. Does not refer to illicit drugs.

PDI: Poisoning and drug intoxication. A PDI can be classified as an Accident, Suicide or Homicide depending on the circumstances of death.

Shaken baby syndrome: Abusive head trauma resulting in very specific constellations of injuries to the brain and retinas of the eyes seldom found together in any other kind of child abuse, medical or accidental trauma[1].

SUDI: Sudden unexplained death of an infant (< one year of age).

Verdict at Inquest: A summary of the jury's findings regarding how, when, where and by what means the deceased died. Recommendations made by the jury are also included in the Verdict at Inquest. The evidence presented at the Inquest is summarized by the Presiding Coroner and is also included in the Verdict at Inquest. It is a public document that forms the official provincial record of the death.

[1] Levin AV. Retinal haemorrhages and child abuse. In: David TJ, ed. Recent Advances in Paediatrics, no. 18. London: Churchill Livingstone, 2000, pp. 151-219

Appendix 1: Summary of Previously Reviewed Cases

Year of Death	Number (%) of Deaths
2000	3 (1%)
2001	5 (2%)
2002	185 (86%)
2003	22 (11%)
TOTAL	215

Table 38 — Number and percentage of deaths previously reviewed by year of death

Classification of Death	Number (%) of Deaths
Accident	101 (46%)
Natural	31 (15%)
Undetermined	29 (13%)
Suicide	27 (12%)
Non-Coroner Case	14 (7%)
Homicide	13 (6%)
TOTAL	215

Table 39 — Number and percentage of deaths previously reviewed by classification of death

BCCS Region	Number (%) of Deaths
Fraser	55 (26%)
Interior	46 (21%)
Island	44 (20%)
Vancouver Metro	42 (19%)
Northern	28 (13%)
TOTAL	215

Table 40 — Number and percentage of deaths previously reviewed by BCCS region

Out of the 955 Children's Commission files that the BCCS was assigned to review, 215 had received secondary review by the CDR Unit in 2003 when they initially took over this responsibility. These deaths were reported in the BCCS Child Death Review Report (2005). Over 200 of these deaths occurred as the Children's Commission was closing, or was already closed. Although child death review was not a function of the BCCS until 2003, the CDR Unit decided to review 2002 deaths so that no death that occurred during the transition period went un-reviewed.

- The deaths of 142 male and 73 female children were previously reviewed.
- The average age of children was 10.2 years.
- 23 (11%) children were Aboriginal.
- Accidents were the leading classification of death, accounting for 101 (47%) of deaths (Table 39) followed by Natural, Undetermined and Suicide deaths (12-15%).
- The highest number of deaths was of children residing in the Fraser region, with the lowest number of child deaths in the Northern region (Table 40).

Appendix 2: Map of BCCS Provincial Regions

The five regions of the BCCS are illustrated in the above map. Metro refers to the Vancouver Metro region. See text for further description of regions (Part II, section 4)

Appendix 3: Sudden Unexpected Death in Infancy Definitions

Sudden Unexpected Deaths in Infancy are classified according to the following criteria:

- Sudden Unexpected Death in Infancy (SUDI) (Accident, Natural-Unexpected, Undetermined, Homicide): In these cases, a specific disease, injury or other risk factor with anatomical evidence was identified as the cause of death (e.g., pneumonia, asphyxial markers and position at time of death).
- Sudden Unexpected Death in Infancy (SUDI, Undetermined): No anatomical cause of death was identified. There was evidence of an external risk factor (e.g., sleeping face down or sleeping with an adult) that may or may not have contributed to the death.
- Classic SIDS (Undetermined): No anatomical cause of death was identified. There was no evidence of illness, malformation, disease, or external stressor which could account for the death, and no other identified risk factors present.
- Consistent with SIDS (Undetermined): There were classic signs of SIDS. However, evidence of an illness or disease was found, that may or may not have contributed to the death as its role in the death is unclear.

Appendix 4: "955 Transition Files" Summary

Year of Death	1996	1997	1998	1999	2000	2001	2002	2003
# of cases (out of 951)	1	11	32	126	173	205	359	44

Classification of death	Accident	Homicide	Undetermined	Natural-Unexpected	Suicide	Natural-Expected	Non-Coroner Case
# of cases (out of 951)	1	11	32	126	173	205	359

Region	Island	Interior	Vancouver Metro	Fraser	Northern	Out of Province
# of cases (out of 951)	173	167	267	234	108	2

Developmental Stage	Neonate	Infant	Youth	Teenager
# of cases (out of 951)	187	89	325	350

Gender	Female	Male
# of cases (out of 951)	377	574

Aboriginal	Yes	No
# of cases (out of 951)	83	868

Additional Resources

BC Injury Research and Prevention. Unintentional injuries in British Columbia: Trends and Patterns Among Children and Youth. (2005).

British Columbia Coroners Act www.qp.gov.bc.ca/statreg/stat/c/96072%5F01.htm

British Columbia Child, Family and Community Service Act

www.qp.gov.bc.ca/statreg/stat/C/96046_01.htm

Report of the Gove Inquiry into Child Protection in British Columbia

www.qp.gov.bc.ca/gove/govevol2.htm

British Columbia Children and Youth Review: An independent review of B.C.'s Child Protection System, conducted by Mr. Ted Hughes, Q.C. www.childyouthreview.ca

Child and Youth Officer for British Columbia www.gov.bc.ca/cyo

Special Report: Sayt K?üülm Goot- Of One Heart.
Preventing Aboriginal youth suicide through youth and community engagement.

Child Health and Safety

Public Health Agency of Canada Division of Childhood and Adolescence
www.phac-aspc.gc.ca/dca-dea/main_e.html

Canadian Paediatric Society —Caring for Kids www.caringforkids.cps.ca

Safe Kids Canada www.sickkids.ca/safekidscanada

Additional Sources of Vital Statistics

British Columbia Vital Statistics Agency www.vs.gov.bc.ca

Statistics Canada www.statcan.ca

British Columbia Coroners Service

British Columbia Coroners Service Child Death Review Report (2005)
www.pssg.gov.bc.ca/coroners/child-death-review/reports/BCCS_Child_Death_Review_Report_2005.pdf

Child Safety Bulletin, July 6, 2005
www.pssg.gov.bc.ca/coroners/media/releases/Safe_Sleep_CS_Bulletin.pdf

Infant Death Report (2003-2004)
www.pssg.gov.bc.ca/coroners/child-death review/reports/CDR_Infant_Death_Report_2003_04.pdf

Overview of Child Death Review
www.pssg.gov.bc.ca/coroners/child-death-review/reports/CDR_overview.pdf

Child and Youth Deaths in BC
www.pssg.gov.bc.ca/coroners/child-death-review/reports/CHILD_AND_YOUTH_DEATHS_IN_BC.pdf

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